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May 8, 2000

# Addendum Number 2

to the

## Montana Public Works

## Standard Specifications

### Fourth Edition, January 1996

The following corrections, clarifications, and/or alterations to the Fourth Edition of the Montana Public Works Standard Specification are a part and parcel of said specifications as if included therein. This Addendum supercedes and replaces select sections of the bound specifications and all of Addendum Number 1 dated June 1, 1998. All documents and changes included in Addendum Number 1 are reissued and included in this Addendum. Specification users are encouraged to discard Addendum Number 1 entirely.

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AUG 15 2003

MAR 07 2005

MAR 29 2005

# Contents

Included herein are the following complete specification sections that replace the appropriate sections in the Fourth Edition of the Montana Public Works Standard Specifications and Addendum Number 1:

**Replace the following sections of Addendum No. 1:**

Insert Guide Page – 4 at beginning of Book	
Section 00020	Invitation to Bid
Section 00100	Instruction to Bidders
Section 00300	Bid Form
Section 00500	Agreement Form
Section 00800	Standard General Conditions of the Construction Contract Prepared by Engineers Joint Contracts Documents Committee (EJCDC No. 1910-8, 1996 Edition)
Section 00810	Supplementary Conditions to the General Conditions
Misc. EJCDC Forms	Bid Bond Payment Bond Performance Bond Notice of Award Notice to Proceed Application for Payment Work Change Directive Change Order Certificate of Substantial Completion

**Replace the following Sections in Fourth Edition (January 1996) of MPWSS:**

Section 01010	Summary of Work
Section 02225	Flowable Fill
Section 02234	Subbase Course
Section 02235	Crushed Base Course
Section 02501	Asphalt Materials
Section 02503	Hot Plant Mix Asphalt Base and Surface Course, New and Overlay Applications
Section 02504	Asphalt Seal Coat

**Make the following changes to the list of Standard Drawings:**

Section 02529

1. Delete Drawing No. 02529-5, Drive Approach Detail and replace with Drawing No. 02529-5A, Boulevard Drive Approach Detail, and Drawing No. 02529-5B, Curb Walk Drive Approach Detail.
2. Delete Drawing No. 02529-7, Alley Approach, and replace with Drawing No. 02529-7A, Boulevard Alley Approach Detail, and Drawing No. 02529-7B, Curb Walk Alley Approach Detail
3. Delete Drawing No. 02529-8, Pedestrian Ramp for Handicapped, and replace with Drawing No. 02529-8A, Accessibility Ramp Detail (Retro-Fit), and Drawing No. 02529-8B, Accessibility Ramp Detail (New Construction).

Appendix A

1. Delete Standard Drawing Nos. 02528-1, 02528-2, 02529-5, 02529-7, 02529-8, 02721-1 and 02721-2.
2. Replace with similar numbered drawings included herein: 02528-1, 02528-2, 02529-5A, 02529-5B, 02529-7A, 02529-7B, 02529-8A, 02529-8B, 02721-1, and 02721-2.

The Miscellaneous Forms including the Bond Forms, Notice of Award, Notice to Proceed, Change Order, Work Change Directive, Application for Payment, and Certificate of Substantial Completion that are contained in this Addendum are copyrighted EJCDC documents. These forms have been included to illustrate the appropriate use of an integrated set of documents. These forms should not be reproduced. Copies of these forms can be obtained from the National Society of Professional Engineers (<http://www.nspe.org> or 1-800-417-0348) or ACEC 1015 15<sup>th</sup> St., NW, Washington, DC 20005, or FAX 202-789-7220.

**SPECIAL PROVISIONS**  
**SECTION 00850**

No two construction projects are the same. The nature of differing projects requires changes to any standard specification. Changes to the Montana Public Works Standard Specification (MPWSS) to accommodate specific project requirements are anticipated. These changes are not to be made by physically modifying the individual printed sections, but rather identifying and describing all modifications in this Section 00850. By having all project specific changes to the MPWSS in one location, the users of the document will not be required to search the entire document but will have all changes in one convenient location.

The Standard General Conditions, Section 00700, also contains references to the identity of certain information in the Supplementary Conditions. Among other items, specific information used by the Engineer in preparation of the design is to be identified. MPWSS has prepared the Supplementary Conditions with references to these Special Provisions, Section 00850, for identification of the design information. Specification writers need to look specifically at the following Articles in the General Conditions and the Supplementary Conditions:

GC & SC-4.02  
GC & SC-4.04  
GC & SC-4.06  
GC & SC-9.03

The Specification Writer is encouraged to obtain a copy of the Guide to the Preparation of Supplementary Conditions prepared by Engineers Joint Contract Documents Committee (EJCDC No. 1910-17). This guide contains instructions and discussion of how to format a section to modify standard specifications and prepare responses to the above required information.

A faint, light gray watermark of the Lincoln Memorial is visible in the background. The memorial is a large, neoclassical structure with a prominent portico of Corinthian columns supporting a classical entablature and a triangular pediment. The central part of the building is a large, shallow dome. The entire structure is set against a bright, overexposed sky.

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**SECTION 00020**  
**INVITATIOIN TO BID**

Separate sealed bids for construction of \_\_\_\_\_  
will be received by \_\_\_\_\_ at the office of \_\_\_\_\_  
\_\_\_\_\_, until \_\_\_\_\_ local time on \_\_\_\_\_  
\_\_\_\_\_, and then publicly opened and read aloud.

The project consists of: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The contract documents consisting of Drawings and Project Manual may be examined or obtained at the office of \_\_\_\_\_ in accordance with Article 2.01 of Instructions To Bidders. Required deposit is \$ \_\_\_\_\_ per set, which is not refundable.

In addition, the Drawings and Project Manual may also be examined at the following locations: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

There will be a Pre-Bid Conference at the office of \_\_\_\_\_  
at \_\_\_\_\_ o'clock on \_\_\_\_\_. Interested CONTRACTORS are encouraged to attend.

CONTRACTOR and any of the CONTRACTOR's subcontractors doing work on this project will be required to obtain registration with the Montana Department of Labor and Industry (DLI). Forms for registration are available from the Department of Labor and Industry, P.O. Box 8011, 1805 Prospect, Helena, Montana 59604-8011. Information on registration can be obtained by calling 1-406-444-7734. CONTRACTOR is not required to have registered with the DLI prior to bidding on this project, but must have registered prior to execution of the Construction Agreement. All laborers and mechanics employed by CONTRACTOR or subcontractors in performance of the construction work shall be paid wages at rates as may be required by the laws of \_\_\_\_\_ (County) and the state of Montana. The CONTRACTOR must ensure that employees and applicants for employment are not discriminated against because of their race, color, religion, sex or national origin.

Each bid or proposal must be accompanied by a Certified Check, Cashier's Check, or Bid Bond payable to \_\_\_\_\_, in an amount not less than ten percent (10%) of the total amount of the bid. Successful BIDDERS shall furnish an approved Performance Bond and a Labor and Materials Payment Bond, each in the amount of one hundred percent (100%) of the contract amount. Insurance as required shall be provided by the successful BIDDER(s) and a certificate(s) of that insurance shall be provided.

This project is funded in part or in whole with grant/loan funding from \_\_\_\_\_

Award of the project will be contingent upon receiving funding and award concurrence from

No bid may be withdrawn after the scheduled time for the public opening of bids, which is \_\_\_\_\_  
a.m. local time \_\_\_\_\_, 20\_\_\_\_\_.  
  
*(Note: The date and year should be handwritten in the blank space.)*

The right is reserved to reject any or all proposals received, to waive informalities, to postpone the award of the contract for a period of not to exceed sixty (60) days, and to accept the lowest responsive and responsible bid which is in the best interest of the OWNER.

\_\_\_\_\_ is an Equal Opportunity Employer.

Published at \_\_\_\_\_, Montana, this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_

(Title)

Address:

, Montana 59

## SECTION 00100 INSTRUCTIONS TO BIDDERS

### **ARTICLE 1 - DEFINED TERMS**

1.01 Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions and the Supplementary Conditions. Additional terms used in these Instructions To Bidders have the meanings indicated below which are applicable to both the singular and plural thereof:

A. "Bidder" --The individual or entity who submits a Bid directly to OWNER.

B. "Issuing Office" --The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.

C. "Successful Bidder" --The lowest responsible Bidder submitting a responsive Bid to whom OWNER (on the basis of OWNER's evaluations as hereinafter provided) makes an award.

### **ARTICLE 2 - COPIES OF BIDDING DOCUMENTS**

2.01 Complete sets of the Bidding Documents in the number and for the deposit sum, if any, stated in the Invitation to Bid may be obtained from the Issuing Office. The deposit will not be refunded.

2.02 Complete sets of Bidding Documents must be used in preparing Bids; neither OWNER nor ENGINEER assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.03 OWNER and ENGINEER in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

### **ARTICLE 3 - QUALIFICATION OF BIDDERS**

3.01 To demonstrate Bidder's qualifications to perform the Work, within five (5) days of OWNER's request, Bidder shall submit written evidence, such as financial data, previous experience in performing comparable work, present commitments and other such data as may be called for in the Special Provisions.

In determining the lowest responsible bid, the following elements will be considered: whether the BIDDER involved (a) maintains a permanent place of business; (b) has adequate plant and equipment to do the work properly and expeditiously; (c) has a suitable financial status to meet obligations incident to the work; and (d) has appropriate technical experience.

Each BIDDER may be required to show that former work performed by him has been handled in such a manner that there are no just or proper claims pending against such work. No BIDDER will be acceptable if he is engaged on any other work which impairs his ability to finance his contract. The BIDDER shall demonstrate his ability by meeting all requirements herein stipulated, if asked for them.

## **ARTICLE 4 - EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA AND SITE**

### **4.01 Subsurface and Physical Conditions**

A. The Special Provisions identify:

1. Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that ENGINEER has used in preparing the Bidding Documents.
2. Those drawings of physical conditions in or relating to existing surface and subsurface structures at or contiguous to the Site (except Underground Facilities) that ENGINEER has used in preparing the Bidding Documents.

B. Copies of reports and drawings referenced in paragraph 4.02.A will be made available by OWNER to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in paragraph 4.02 of the General Conditions has been identified and established in paragraph 4.02 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

### **4.02 Underground Facilities**

A. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to OWNER and ENGINEER by owners of such Underground Facilities, including OWNER, or others. OWNER and ENGINEER do not assume responsibility for the accuracy or completeness thereof unless expressly provided otherwise elsewhere.

### **4.03 Hazardous Environmental Condition**

A. The Special Provisions identify those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that ENGINEER has used in preparing the Bidding Documents.

B. Copies of reports and drawings referenced in paragraph 4.03.A will be made available by OWNER to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided

in the Special Provisions has been identified and established in paragraph 4.06 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

4.04 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, Underground Facilities and other physical conditions, and possible changes in the Bidding Documents due to differing or unanticipated conditions appear in paragraphs 4.02, 4.03, and 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work appear in paragraph 4.06 of the General Conditions.

4.05 Upon request, OWNER will provide Bidder access to the site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill and compact all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies..

4.06 Reference is made to the Special Provisions for the identification of the general nature of other work that is to be performed at the Site by OWNER or others (such as utilities and other prime contractors) that relates to the Work for which a Bid is to be submitted. On request, OWNER will provide to each bidder for examination access to or copies of Contract Documents (other than portions thereof related to price) for such work.

4.07 It is the responsibility of each Bidder before submitting a Bid to:

    A. Examine and carefully study the Bidding Documents including any Addenda and the other related data identified in the Bidding Documents;

    B. Visit the site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work; including but not limited to those general and local conditions affecting transportation, disposal, handling and storage facilities, availability of labor, water, power, roads, climactic conditions and seasons, physical conditions at the work Sites and project area as a whole, job site topography and ground conditions, equipment and facilities needed preliminary to and during work prosecution,

    C. Become familiar with and satisfy Bidder as to all Federal, State and Local Laws and Regulations that may affect cost, progress, or performance of the Work;

    D. Carefully study all reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except underground Facilities) which have been identified in the Special Provisions as provided in paragraph 4.02 of the General Conditions, and carefully study all reports and drawings of a Hazardous Environmental Condition, if any, at the Site

which have been identified in the Special Provisions as provided in paragraph 4.06 of the General Conditions;

E. Obtain and carefully study (or assume responsibility for doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;

F. Agree at the time of submitting its bid that no further examinations, investigations, exploration, tests, studies or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;

G. Become aware of the general nature of the work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents;

H. Correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.

I. Promptly give ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by ENGINEER is acceptable to the Bidders; and

J. Determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

4.08 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences or procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in Bidding Documents and the written resolutions thereof by ENGINEER are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

## **ARTICLE 5 - PRE-BID CONFERENCE**

5.01 A pre-Bid conference will be held at the time and place listed in the Invitation To Bid. Representatives of OWNER and ENGINEER will be present to discuss the project. Bidders are encouraged to attend and participate in the conference. ENGINEER will transmit to all prospective bidders of record such Addenda as ENGINEER considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

## **ARTICLE 6 - SITE AND OTHER AREAS**

6.01 The Site is identified in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by CONTRACTOR. Easement for permanent structures or permanent changes in existing facilities are to be obtained and paid for by OWNER unless otherwise provided in the Bidding Documents.

## **ARTICLE 7 - INTERPRETATIONS AND ADDENDA**

7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to ENGINEER in writing. Interpretations or clarifications considered necessary by ENGINEER in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by ENGINEER as having received the Bidding Documents. Questions received less than ten (10) days prior to the date for opening of Bids may not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

7.02 Addenda may be issued to clarify, correct or change the Bidding Documents as deemed advisable by OWNER or ENGINEER.

7.03 Any addenda issued during the time of bidding, or forming a part of the Contract Documents loaned to the Bidder for the preparation of his proposal, shall be covered in the Bid and shall be made a part of the Agreement. Receipt of each addendum shall be acknowledged in the Bid. Any Bid in which all issued addenda are not acknowledged will be considered incomplete and will not be read.

## **ARTICLE 8 - BID SECURITY**

8.01 A Bid must be accompanied by Bid Security made payable to OWNER in an amount of ten percent (10%) of Bidder's maximum Bid price and in the form of cash, a cashier's check, certified check, bank money order, or bank draft, in any case drawn and issued by a national banking association located in Montana or by any banking corporation incorporated under the laws of Montana; or a Bid Bond (on a form attached if a form is prescribed) issued by a surety authorized to do business in Montana meeting the requirements of Paragraphs 5.01 and 5.02 of the General Conditions. Bid Bonds shall be countersigned by a Resident Montana Agent.

8.02 The Bid Security of the Successful BIDDER will be retained until such BIDDER has executed the Contract Documents and furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within fifteen (15) days after the Notice of Award, OWNER may annul the Notice of Award and the Bid Security of that Bidder will be forfeited. The Bid Security of other Bidders whom OWNER believes to have a reasonable chance of receiving the award may be retained by OWNER until the earlier of (7) seven days after the Effective Date of the Agreement or (61) sixty-one days after the Bid opening, whereupon Bid Security furnished by such Bidders will be returned.

8.03 Bid security of other Bidders whom OWNER believes do not have a reasonable chance of receiving the award will be returned within seven days after Bid opening.

## **ARTICLE 9 - CONTRACT TIMES**

9.01 The number of days within which, or the dates by which, the Work is to be (a) Substantially Completed and (b) also completed and ready for final payment are set forth in the Agreement.

## **ARTICLE 10 - LIQUIDATED DAMAGES**

10.01 Provisions for liquidated damages, if any, are set forth in the Agreement.

## **ARTICLE 11 - SUBSTITUTE AND "OR-EQUAL" ITEMS**

11.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or "or-equal" items. Whenever it is indicated in the Bidding Documents that a substitute or "or equal" item of material or equipment may be furnished or used by CONTRACTOR if acceptable to ENGINEER, application for such acceptance will not be considered by ENGINEER until after the Effective Date of the Agreement. The procedure for submission of any such application by CONTRACTOR and consideration by ENGINEER is set forth in Paragraphs 6.05 of the General Conditions and may be supplemented in the General Requirements or Special Provisions.

## **ARTICLE 12 - SUBCONTRACTORS, SUPPLIERS AND OTHERS**

12.01 If the Special Provisions require or the OWNER would request the identity of certain Subcontractors, Suppliers, individuals or entities to be submitted to OWNER in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall will within five (5) days after Bid opening submit to OWNER a list of all such Subcontractors, Suppliers, individuals or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity if requested by OWNER. If OWNER or ENGINEER after due investigation has reasonable objection to any proposed Subcontractor, Supplier, individual or entity OWNER may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute, without an increase in the Bid.

12.02 If the apparent Successful Bidder declines to make any such substitution, the OWNER may determine such Bidder to be non-responsive and reject the Bid. Declining to make requested substitution will not constitute grounds for forfeiture of the Bid Security of any Bidder. Any Subcontractor, Supplier, individual or entity so listed and against which OWNER and ENGINEER makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to OWNER and ENGINEER subject to revocation of such acceptance after the Effective Date of the Agreement as provided in Paragraph 6.06 of the General Conditions.

12.03 CONTRACTOR shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom CONTRACTOR has reasonable objection.

## **ARTICLE 13 - PREPARATION OF BID**

13.01 The Bid Form is included with the Bidding Documents; additional copies may be obtained from the ENGINEER. Bids shall be strictly in accordance with the prescribed form. Any modifications thereof or deviations therefrom may be considered as sufficient cause for rejection. Bids carrying riders or qualifications to the Bid being submitted may be rejected as irregular.

13.02 All blanks on the Bid Form shall be completed by printing in ink or by typewriter and the Bid signed. A Bid price shall be indicated for each Bid item listed therein, or the words "No Bid", "No Change", or "Not Applicable" entered.

13.03 Bids by a corporation must be executed in the corporate name by the president or a vice-president or other corporate officer who is authorized to bind the corporation, and the corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation must be shown below the signature. The Bid of a corporation, which is signed by a person other than a corporate officer, must be accompanied by evidence of authority to sign.

13.04 A bid by a partnership shall be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature.

13.05 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The State of formation of the firm and the official address of the firm must be shown below the signature.

13.06 A Bid by an individual shall show the Bidder's name and official address.

13.07 A Bid by a Joint Venture shall be executed by each Joint Venturer in the manner indicated on the Bid form. The official address of the Joint Venture must be shown below the signature.

13.08 All signatures are to be in ink and names must be typed or printed below the signature. The title of the person(s) executing the Bid shall be clearly indicated beneath the signature.

13.09 The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which must be filled in on the Bid Form). Bids in which all issued addenda are not acknowledged will be considered incomplete and will not be read.

13.10 The address and telephone number for communications regarding the Bid must be shown.

13.11 Current Montana Contractor's registration number, if any, must be shown.

## **ARTICLE 14 - BASIS OF BID; EVALUATION OF BIDS**

14.01 Bids.

A. Bidders shall submit a Bid on a unit price and/or lump sum basis for each item of Work listed in the Bid schedule as provided in the Bid form. The Bid will not be considered unless the Bid Form contains prices for all unit price and/or lump sum items, and alternates, as shown on the Bid Form. Bids and totals shall be shown legibly in their proper locations. The total amount of the Bid shall be legibly written and numerically presented in the proper places and the Bid Form shall be manually signed.

B. The total of all estimated prices will be determined as the sum of the products of the estimated quantity of each item and the unit price bid for the item. The final quantities and Contract Price will be determined in accordance with paragraph 11.03 of the General Conditions.

C. Discrepancies between the multiplication of units of Work and unit price will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

## **ARTICLE 15 - SUBMITTAL OF BID**

15.01 Each prospective Bidder is to execute one copy of the Bidding Documents. The Bid form is to be completed and submitted with the Bid security along with additional documents, if any, as identified in the Special Provisions.

15.02 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the Invitation to Bid and shall be enclosed in an opaque sealed envelope, plainly marked with the Project title (and, if applicable, the designated portion of the Project for which the bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid Security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate envelope plainly marked on the outside with the notation "BID ENCLOSED". A mailed bid shall be addressed to the address shown in the Invitation To Bid.

15.03

- A. The Bid will not be considered unless accompanied by proper Bid Security in accordance with Article 8 of these Instruction to Bidders.
- B. Alternative Bids will not be considered unless called for.
- C. Bids by telephone, telegraph, fax or other telecommunication systems will not be considered.

## **ARTICLE 16 - MODIFICATION AND WITHDRAWAL OF BIDS**

16.01 Bids may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids as called for in the Invitation to Bid. Requests for modification or withdrawal must be written and must be signed in the same manner and by the same person(s) who signed the Bid.

16.02 If, within twenty-four hours after Bids are opened any Bidder files a duly signed written notice with OWNER and promptly thereafter demonstrates to the reasonable satisfaction of OWNER that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid and the Bid security will be returned. Thereafter, if the Work is rebid or negotiated, that Bidder will be disqualified from further bidding on the Work.

## **ARTICLE 17 - OPENING OF BIDS**

17.01 Bids will be opened at the time set for opening in the Invitation to Bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates (if any) will be made available to Bidders after the opening of Bids.

## **ARTICLE 18 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE**

18.01 All bids will remain subject to acceptance for sixty (60) days after the day of the Bid opening, but OWNER may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

## **ARTICLE 19 - AWARD OF CONTRACT**

19.01 OWNER reserves the right to reject any and all Bids, including without limitation, nonconforming, nonresponsive, unbalanced or conditional Bids. OWNER further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to be non-responsive. OWNER also reserves the right to waive all informalities not involving price, time or changes in the Work and to negotiate contract terms with the Successful Bidder. OWNER reserves the right to reject the Bid of any Bidder if OWNER believes it would not be in the best interest of the Project to make an award to that Bidder whether because Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by OWNER.

19.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of the Bidder and the rejection of all Bids in which that bidder has an interest.

19.03 In evaluating Bids, OWNER will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice To Proceed

19.04 In evaluating Bidders, OWNER will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Special Provisions.

19.05 OWNER may conduct such investigations as OWNER deems necessary to establish the responsibility, qualifications and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals or entities to perform the Work in accordance with the Contract Documents.

19.06 If the Contract is to be awarded, OWNER will award the Contract to the responsible bidder whose Bid, conforming with all material terms and conditions of the Bidding Documents, is lowest price, in the best interest of the Project, and other factors considered. The OWNER reserves the right to accept or reject the Bids, or portions of Bids if denoted in the Bid as separate schedules, and to award more than one Bid or schedule for the same Bid if any of the aforementioned combination of Bids or schedules will be in the best interest of the OWNER. The OWNER reserves the right to cancel the award of any Agreement at any time before the complete execution of said Agreement by all parties without any liability against the OWNER.

## **ARTICLE 20 - CONTRACT SECURITY**

20.01 Article 5 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth OWNER's requirements as to Performance Bond, Payment Bond, and certificates of insurance. When the Successful Bidder delivers the executed Agreement to OWNER, it must be accompanied by such Bonds and insurance.

## **ARTICLE 21 - SIGNING OF AGREEMENT**

21.01 When OWNER gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents which are identified in the Agreement as attached thereto. Within fifteen (15) days thereafter, Successful Bidder shall sign and deliver at least three (6) counterparts of the Agreement and attached documents to OWNER. Within fifteen (15) days thereafter OWNER shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings and Specifications.

## **ARTICLE 22 - STATE LAWS AND REGULATIONS**

22.01 All applicable laws, ordinances and the rules and regulations of authorities having jurisdiction over construction of the project shall apply to the Contract throughout. State laws and ordinances which the CONTRACTOR must comply with, include but are not limited to, those involving workmen's compensation insurance, contractor registration, employment preference to Montana contractors and Montana residents, and gross receipts tax.

End of Section 00100



**SECTION 00300  
BID FORM**

**PROJECT IDENTIFICATION:**

---

(Name of Project)

---

(Location)

---

(If applicable, Project or portion of Project for which Bid is submitted)

**CONTRACT IDENTIFICATION AND NUMBER:**

---

(Title, Number, etc. that appears elsewhere in Bidding Documents.)

**THIS BID SUBMITTED TO:**

---

(Organization)

---

(Street; P.O. Box)

---

(City)

---

(State)

---

(Zip Code)

**1.01** The undersigned Bidder proposes and agrees if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Bidding Documents, to perform and furnish all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

**2.01** Bidder accepts all of the terms and conditions of the Advertisement or Invitation to Bid, and Instruction to Bidders, including without limitations those dealing with the disposition of Bid Security. This Bid will remain subject to acceptance for sixty (60) days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of OWNER.

**3.01** In submitting this Bid, Bidder represents, as set forth in the Agreement, that:

A. Bidder has examined and carefully studied the Bidding Documents, other related data identified in the Bidding Documents, and the following Addenda, receipt of all which is hereby acknowledged the following Addenda:

<u>Addendum No.</u>	<u>Addendum Date</u>
_____	_____
_____	_____
_____	_____

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work

C. Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Bidder has carefully studied all (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Special Provisions as provided in paragraph 4.02 of the General Conditions, and (2) reports and drawings of a Hazard Environmental Condition, if any, which has been identified in the Special Provisions as provided in paragraph 4.06 of the General Conditions.

E. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.

F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.

G. Bidder is aware of the general nature of the Work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents.

H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies and data with the Bidding Documents.

I. Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by ENGINEER is acceptable to Bidder.

J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

**4.01** Bidder further represents that this Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm or corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

The BIDDER certifies that no official of the OWNER, ENGINEER or any member of such officials immediate family, has direct or indirect interest in the pecuniary profits or Contracts of the BIDDER.

**5.01** The Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

**UNIT PRICE SCHEDULE**

<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>ESTIMATED QUANTITY</b>	<b>UNIT</b>	<b>UNIT PRICE</b>	<b>TOTAL PRICE</b>

**TOTAL ESTIMATED BID PRICE** \$ \_\_\_\_\_  
(Figures)

**TOTAL ESTIMATED BID PRICE** \_\_\_\_\_  
(Words)

{ or }

**LUMP SUM BID**

**TOTAL LUMP SUM BID PRICE** \$ \_\_\_\_\_  
—  
(Figures)

**TOTAL LUMP SUM  
BID PRICE** \_\_\_\_\_  
(Words)

A. Unit Prices have been computed in accordance with paragraph 11.03.B. of the General Conditions.

B. Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities provided, determined as provided in the Contract Documents.

C. The undersigned agrees that the unit prices shall govern in checking the Bid, and should a discrepancy exist in the Total Estimated Price and Total Amount of Unit Prices Bid as listed above after extensions are checked and corrections made, if any, the Total Amount of Unit Prices Bid as corrected shall be used in awarding this Contract.

D. The OWNER reserves the right to reject any or all bids.

**6.01** Bidder agrees that the Work will be substantially completed and compete and ready for final payment in accordance with 14.07 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

**6.02** Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified above, which shall be stated in the Agreement.

**7.01** The following documents are attached to and made a condition of the Bid:

A. Required Bid security in the amount of 10% of the maximum Bid price including alternates, if any, and in the form of a Bid Bond identified in the Instructions To Bidders.

*{Specific for each project}*

B. *AGENCY required certifications. (Refer to Special Provisions, for AGENCY certifications and requirements.)*

C. *Any requirements per Special Provisions, including a tabulation of Subcontractors, Suppliers {and others} individuals and entities required to be identified in this Bid, required Bidder qualifications statement with supporting data; and,*

*D. List other documents as pertinent.*

**8.01** The terms used in this Bid with the initial capital letters have the meanings indicated in the Instructions To Bidders, General Conditions, and the Supplementary Conditions.

SUBMITTED on \_\_\_\_\_.

Montana Contractor's Registration # (if any) \_\_\_\_\_.

Employer's Tax ID No. \_\_\_\_\_.

**If BIDDER is:**

**An Individual:** \_\_\_\_\_  
(Name typed or printed)

By: \_\_\_\_\_ (SEAL)  
(Individual's Signature)

Doing business as: \_\_\_\_\_

Business Address: \_\_\_\_\_  
\_\_\_\_\_

Phone No.: \_\_\_\_\_ FAX No.: \_\_\_\_\_

**A Partnership:** \_\_\_\_\_  
(Partnership Name)

By: \_\_\_\_\_ (SEAL)  
(Signature)

\_\_\_\_\_ (Name, typed or printed)

Business Address: \_\_\_\_\_  
\_\_\_\_\_

Phone No.: \_\_\_\_\_ FAX No.: \_\_\_\_\_

**A Corporation:** \_\_\_\_\_ (SEAL)

(Corporation Name)

State of Incorporation: \_\_\_\_\_

Type(General Business, Professional, Service, Limited Liability): \_\_\_\_\_

By: \_\_\_\_\_  
(Signature of person authorized to sign)

Title: \_\_\_\_\_

Attest: \_\_\_\_\_ (CORPORATE SEAL)  
(Signature of Secretary)

Business Address: \_\_\_\_\_  
\_\_\_\_\_

Phone No.: \_\_\_\_\_ FAX No: \_\_\_\_\_

Date of Qualification To Do Business Is: \_\_\_\_\_

**A Joint Venture:** Each Joint Venture Must Sign

Joint Venturer Name: \_\_\_\_\_ (SEAL)  
(Name)

By: \_\_\_\_\_  
(Signature of Joint Venture Partner)

Name: \_\_\_\_\_  
(Name, printed or typed)

Title: \_\_\_\_\_

Business Address: \_\_\_\_\_  
\_\_\_\_\_

Phone No.: \_\_\_\_\_ FAX No: \_\_\_\_\_

Joint Venturer Name: \_\_\_\_\_ (SEAL)

(Name)

By: \_\_\_\_\_  
(Signature of Joint Venture Partner)

Name: \_\_\_\_\_  
(Name, printed or typed)

Title: \_\_\_\_\_

Business Address: \_\_\_\_\_  
\_\_\_\_\_

Phone No.: \_\_\_\_\_ FAX No: \_\_\_\_\_

Address of Joint Venture for Receipt of Official Communication:

Address: \_\_\_\_\_  
\_\_\_\_\_

Phone No.: \_\_\_\_\_ FAX No: \_\_\_\_\_

(Each Joint Venture must sign. The manner of signing for each individual, partnership and corporation that is a party to the joint venture should be in the manner indicated above.)

END OF SECTION 00300



**SECTION 00500  
AGREEMENT FORM**

This Agreement is dated as of the \_\_\_\_\_ day of \_\_\_\_\_ in the year \_\_\_\_\_, by and between \_\_\_\_\_, hereinafter called "OWNER" and \_\_\_\_\_, hereinafter called CONTRACTOR. OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

## Article 1. WORK.

1.01 CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows: \_\_\_\_\_

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## Article 2. THE PROJECT.

2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

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### Article 3. ENGINEER.

### 3.01 The Project has been designed by:

who is hereinafter called ENGINEER and who is to act as OWNER's representative, assume all duties and responsibilities and have the rights and authority assigned to ENGINEER in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

## **Article 4. CONTRACT TIME.**

### **4.01 Time of the Essence**

A. All the time limits for milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

### **4.02 Days to achieve Substantial Completion.**

A. The Work will be substantially complete within \_\_\_\_\_ days after the date when the Contract Time commences to run as provided in paragraph 2.03 of the General Conditions.

### **4.03 Liquidated damages.**

A. OWNER and CONTRACTOR recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not completed within the times specified in paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER \_\_\_\_\_ dollars (\$\_\_\_\_\_) for each day that expires after the time specified in paragraph 4.02 for Substantial Completion until the Work is substantially complete.

## **Article 5. CONTRACT PRICE:**

5.01 Owner shall pay CONTRACTOR for completion of the work in accordance with the Contract Documents an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the quantity of that item that is constructed and accepted. Unit prices are those listed in the Unit Price Schedule of the Bid Form attached as Exhibit A to this Agreement. Estimated quantities used for bidding purposes are not guaranteed, payment will be for actual quantities as determined by ENGINEER in accordance with Article 9.08 of the General Conditions. Unit prices have been computed as provided in paragraph 11.03 of the General Conditions.

## **Article 6. PAYMENT PROCEDURES:**

### **6.01 Submittal and Processing of Payments:**

A. CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by ENGINEER as provided in the Contract Documents.

## 6.02 Progress Payments; Retainage:

A. OWNER shall make progress payments in accordance with Article 14 of the General Conditions on account of the Contract Price on the basis of CONTRACTOR's Applications for Payment as recommended by ENGINEER, once each month during construction as provided below. All progress payments will be on the basis of the progress of the Work measured by the number of units of each bid item completed times the bid unit price in the Unit Price Schedule of the Bid Form for that item.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the sum of the unit price items less the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as ENGINEER may determine or OWNER may withhold, in accordance with paragraph 14.02 of the General Conditions.

a. The OWNER shall retain five percent (5%) of the amount of each payment until final completion and acceptance of all Work covered by the Contract Documents.

b. Retainage will be five percent (5%) of materials and equipment not incorporated in the Work (but delivered, suitably stored and accompanied by documentation satisfactory to OWNER as provided in paragraph 14.02 of the General Conditions).

2. Upon Substantial Completion and at the OWNER'S discretion, the amount of retainage may be further reduced if requested by the CONTRACTOR.

6.03 Final Payment. Upon final completion and acceptance of the Work in accordance with paragraph 14.07 of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said paragraph 14.07.

## Article 7. INTEREST:

7.01 All moneys not paid when due as provided in Article 14 of the General Conditions shall bear interest at the maximum rate allowed by law at the place of the Project.

## **Article 8. CONTRACTOR'S REPRESENTATION:**

8.01 In order to induce OWNER to enter into this Agreement, CONTRACTOR makes the following representations:

- A. CONTRACTOR has examined and carefully studied the Contract Documents (including all Addenda listed in paragraph 9 and the other related data identified in the Bidding Documents)
- B. CONTRACTOR has visited the site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, performance or furnishing of the Work.
- C. CONTRACTOR is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress, performance and furnishing of the Work.
- D. CONTRACTOR has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site (except Underground Facilities) which have been identified in the Special Provisions as provided in paragraph 4.02 of the General Conditions and (2) reports and drawings of a Hazardous Environmental Condition, if any, at the Site which has been identified in the Special Provisions as provided in paragraph 4.06 of the General Conditions. CONTRACTOR acknowledges that such reports and drawings are not Contract Documents and may not be complete for CONTRACTOR's purposes. CONTRACTOR acknowledges that OWNER and ENGINEER do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Contract Documents with respect to Underground Facilities at or contiguous to the site.
- E. CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all such additional supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR including applying the specific means, methods, techniques, sequences and procedures of construction, if any, expressly required by the Contract Documents to be employed by the CONTRACTOR, and safety precautions and programs incident thereto.
- F. CONTRACTOR does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the performance and furnishing of the Work at the Contract Price, within the Contract Times and in accordance with the other terms and conditions of the Contract Documents.
- G. CONTRACTOR is aware of the general nature of work to be performed by OWNER and others at the site that relates to the Work as indicated in the Contract Documents.
- H. CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the site, reports and drawings identified in the Contract

Documents and all additional examinations, investigations, explorations, tests, studies and data with the Contract Documents.

I. CONTRACTOR has given ENGINEER written notice of all conflicts, errors, ambiguities or discrepancies that CONTRACTOR has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.

J. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

## **Article 9. CONTRACT DOCUMENTS:**

### **9.01 Contents**

A. The Contract Documents consist of the following:

1. This Agreement (Pages 1 to , inclusive);
2. Performance Bond (pages 1 to , inclusive);
3. Payment Bond (pages 1 to , inclusive);
4. Other Bonds (pages 1 to , inclusive);
  - a. (pages to , inclusive);
  - b. (pages to , inclusive);
  - c. (pages to , inclusive);
5. General Conditions (pages 1 to , inclusive);
6. Supplementary Conditions (pages 1 to , inclusive);
7. Special Provisions (pages 1 to , inclusive);
8. Specifications as listed in the table of contents of the Project Manual;
9. Drawings consisting of a cover sheet and sheets numbered \_\_\_\_ through \_\_\_\_ with each sheet bearing the following general title: \_\_\_\_\_;
10. Addenda (numbers \_\_\_\_\_ to \_\_\_\_\_, inclusive);

11. Exhibits to this Agreement (enumerated as follows):
  - a. Notice To Proceed (pages 1 to \_\_\_\_\_, inclusive),
  - b. CONTRACTOR's Bid (pages \_\_\_\_\_ to \_\_\_\_\_, inclusive);
  - c. Documentation submitted by CONTRACTOR prior to Notice of Award (pages \_\_\_\_\_ to \_\_\_\_\_, inclusive);
  - d. \_\_\_\_\_;
12. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
  - a. Written Amendments;
  - b. Work Change Directives;
  - c. Change Order(s).

B. The documents listed in paragraph 9.01.A. are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 9.

D. The Contract Documents may only be amended, modified or supplemented as provided in paragraphs 3.04 of the General Conditions.

## **Article 10. MISCELLANEOUS:**

### **10.01 Terms.**

A. Terms used in this Agreement which are defined in Article 1 of the General Conditions will have the meanings indicated in the General Conditions.

### **10.02 Assignment of Contract.**

A. No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically, but without limitation, moneys that may come due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

### **10.03 Successors and Assigns**

A. OWNER and CONTRACTOR each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, its partners, successors, assigns and legal representatives in respect of all covenants, agreements and obligations contained in the Contract Documents.

## 10.04 Severability

A. Any provision of part of the Contract Documents held to be void or unenforceable under and Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon OWNER and CONTRACTOR, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed 6 copies of Agreement. Three counterparts have been delivered to OWNER, two to CONTRACTOR and one to ENGINEER. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or by ENGINEER on their behalf.

**This Agreement will be effective on \_\_\_\_\_, \_\_\_\_\_ (which is the effective date of the Agreement). This Agreement shall not be effective unless and until concurred in by AGENCY's designated representative.**

OWNER \_\_\_\_\_

BY \_\_\_\_\_  
(CORPORATE SEAL)

Attest \_\_\_\_\_

Address for giving notices  
\_\_\_\_\_  
\_\_\_\_\_

Phone No. \_\_\_\_\_

FAX No. \_\_\_\_\_

(If OWNER is a public body,  
attach evidence of authority  
to sign and resolution or  
other documents authorizing  
execution of OWNER-CONTRACTOR  
Agreement.

CONTRACTOR \_\_\_\_\_

BY \_\_\_\_\_  
(CORPORATE SEAL)

Attest \_\_\_\_\_

Address for giving notices  
\_\_\_\_\_  
\_\_\_\_\_

Phone No. \_\_\_\_\_

FAX No. \_\_\_\_\_

Contractor Registration No. \_\_\_\_\_

Agent for service of process:  
\_\_\_\_\_  
\_\_\_\_\_

(If CONTRACTOR is a corporation  
or a partnership, attach evidence of  
authority to sign.)

Designated Representative  
Name: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Phone No.: \_\_\_\_\_

FAX No.: \_\_\_\_\_

Designated Representative  
Name: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Phone No.: \_\_\_\_\_

FAX No.: \_\_\_\_\_

AGENCY Concurrence: As lender or insurer of funds to defray the costs of this Contract, and without liability for any payments thereunder, the AGENCY hereby concurs in the form, content, and execution of this Agreement.

By: \_\_\_\_\_  
(AGENCY Official's Signature)

Title: \_\_\_\_\_

Date: \_\_\_\_\_

END OF SECTION 00500

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the Controlling Law.

# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and



AMERICAN CONSULTING  
ENGINEERS COUNCIL

Issued and Published Jointly By



**National Society of  
Professional Engineers**  
*Professional Engineers in Private Practice*



AMERICAN SOCIETY OF  
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*a practice division of the*  
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

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AMERICAN CONSULTING ENGINEERS COUNCIL

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AMERICAN SOCIETY OF CIVIL ENGINEERS

This document has been approved and endorsed by

The Associated General



Contractors of America

Construction Specifications Institute



These General Conditions have been prepared for use with the Owner-Contractor Agreements (No. 1910-8-A-1 or 1910-8-A-2) (1996 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the EJCDC User's Guide (No. 1910-50). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. 1910-17) (1996 Edition).

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## TABLE OF CONTENTS

	<u>Page</u>
<b>ARTICLE 1 - DEFINITIONS AND TERMINOLOGY . . . . .</b>	00700 - 6
1.01 <i>Defined Terms</i> . . . . .	00700 - 6
1.02 <i>Terminology</i> . . . . .	00700 - 8
<b>ARTICLE 2 - PRELIMINARY MATTERS . . . . .</b>	00700 - 9
2.01 <i>Delivery of Bonds</i> . . . . .	00700 - 9
2.02 <i>Copies of Documents</i> . . . . .	00700 - 9
2.03 <i>Commencement of Contract Times; Notice to Proceed</i> . . . . .	00700 - 9
2.04 <i>Starting the Work</i> . . . . .	00700 - 9
2.05 <i>Before Starting Construction</i> . . . . .	00700 - 9
2.06 <i>Preconstruction Conference</i> . . . . .	00700 - 10
2.07 <i>Initial Acceptance of Schedules</i> . . . . .	00700 - 10
<b>ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE . . . . .</b>	00700 - 10
3.01 <i>Intent</i> . . . . .	00700 - 10
3.02 <i>Reference Standards</i> . . . . .	00700 - 10
3.03 <i>Reporting and Resolving Discrepancies</i> . . . . .	00700 - 11
3.04 <i>Amending and Supplementing Contract Documents</i> . . . . .	00700 - 11
3.05 <i>Reuse of Documents</i> . . . . .	00700 - 11
<b>ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS . . . . .</b>	00700 - 11
4.01 <i>Availability of Lands</i> . . . . .	00700 - 11
4.02 <i>Subsurface and Physical Conditions</i> . . . . .	00700 - 12
4.03 <i>Differing Subsurface or Physical Conditions</i> . . . . .	00700 - 12
4.04 <i>Underground Facilities</i> . . . . .	00700 - 13
4.05 <i>Reference Points</i> . . . . .	00700 - 13
4.06 <i>Hazardous Environmental Condition at Site</i> . . . . .	00700 - 14
<b>ARTICLE 5 - BONDS AND INSURANCE . . . . .</b>	00700 - 15
5.01 <i>Performance, Payment, and Other Bonds</i> . . . . .	00700 - 15
5.02 <i>Licensed Sureties and Insurers</i> . . . . .	00700 - 15
5.03 <i>Certificates of Insurance</i> . . . . .	00700 - 15
5.04 <i>CONTRACTOR's Liability Insurance</i> . . . . .	00700 - 15
5.05 <i>OWNER's Liability Insurance</i> . . . . .	00700 - 16
5.06 <i>Property Insurance</i> . . . . .	00700 - 16
5.07 <i>Waiver of Rights</i> . . . . .	00700 - 17
5.08 <i>Receipt and Application of Insurance Proceeds</i> . . . . .	00700 - 18
5.09 <i>Acceptance of Bonds and Insurance; Option to Replace</i> . . . . .	00700 - 18
5.10 <i>Partial Utilization, Acknowledgment of Property Insurer</i> . . . . .	00700 - 18
<b>ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES . . . . .</b>	00700 - 18
6.01 <i>Supervision and Superintendence</i> . . . . .	00700 - 18
6.02 <i>Labor; Working Hours</i> . . . . .	00700 - 19
6.03 <i>Services, Materials, and Equipment</i> . . . . .	00700 - 19
6.04 <i>Progress Schedule</i> . . . . .	00700 - 19
6.05 <i>Substitutes and "Or-Equals"</i> . . . . .	00700 - 19
6.06 <i>Concerning Subcontractors, Suppliers, and Others</i> . . . . .	00700 - 20
6.07 <i>Patent Fees and Royalties</i> . . . . .	00700 - 21
6.08 <i>Permits</i> . . . . .	00700 - 21
6.09 <i>Laws and Regulations</i> . . . . .	00700 - 22
6.10 <i>Taxes</i> . . . . .	00700 - 22
6.11 <i>Use of Site and Other Areas</i> . . . . .	00700 - 22
6.12 <i>Record Documents</i> . . . . .	00700 - 22
6.13 <i>Safety and Protection</i> . . . . .	00700 - 23
6.14 <i>Safety Representative</i> . . . . .	00700 - 23
6.15 <i>Hazard Communication Programs</i> . . . . .	00700 - 23

6.16	<i>Emergencies</i>	00700 - 23
6.17	<i>Shop Drawings and Samples</i>	00700 - 23
6.18	<i>Continuing the Work</i>	00700 - 24
6.19	<i>CONTRACTOR's General Warranty and Guarantee</i>	00700 - 25
6.20	<i>Indemnification</i>	00700 - 25
<b>ARTICLE 7 - OTHER WORK</b>		00700 - 26
7.01	<i>Related Work at Site</i>	00700 - 26
7.02	<i>Coordination</i>	00700 - 26
<b>ARTICLE 8 - OWNER'S RESPONSIBILITIES</b>		00700 - 26
8.01	<i>Communications to Contractor</i>	00700 - 26
8.02	<i>Replacement of ENGINEER</i>	00700 - 26
8.03	<i>Furnish Data</i>	00700 - 26
8.04	<i>Pay Promptly When Due</i>	00700 - 26
8.05	<i>Lands and Easements; Reports and Tests</i>	00700 - 26
8.06	<i>Insurance</i>	00700 - 27
8.07	<i>Change Orders</i>	00700 - 27
8.08	<i>Inspections, Tests, and Approvals</i>	00700 - 27
8.09	<i>Limitations on OWNER's Responsibilities</i>	00700 - 27
8.10	<i>Undisclosed Hazardous Environmental Condition</i>	00700 - 27
8.11	<i>Evidence of Financial Arrangements</i>	00700 - 27
<b>ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION</b>		00700 - 27
9.01	<i>OWNER'S Representative</i>	00700 - 27
9.02	<i>Visits to Site</i>	00700 - 27
9.03	<i>Project Representative</i>	00700 - 27
9.04	<i>Clarifications and Interpretations</i>	00700 - 28
9.05	<i>Authorized Variations in Work</i>	00700 - 28
9.06	<i>Rejecting Defective Work</i>	00700 - 28
9.07	<i>Shop Drawings, Change Orders and Payments</i>	00700 - 28
9.08	<i>Determinations for Unit Price Work</i>	00700 - 28
9.09	<i>Decisions on Requirements of Contract Documents and Acceptability of Work</i>	00700 - 28
9.10	<i>Limitations on ENGINEER's Authority and Responsibilities</i>	00700 - 28
<b>ARTICLE 10 - CHANGES IN THE WORK; CLAIMS</b>		00700 - 29
10.01	<i>Authorized Changes in the Work</i>	00700 - 29
10.02	<i>Unauthorized Changes in the Work</i>	00700 - 29
10.03	<i>Execution of Change Orders</i>	00700 - 29
10.04	<i>Notification to Surety</i>	00700 - 29
10.05	<i>Claims and Disputes</i>	00700 - 30
<b>ARTICLE 11 - COST OF THE WORK; CASH ALLOWANCES; UNIT PRICE WORK</b>		00700 - 30
11.01	<i>Cost of the Work</i>	00700 - 30
11.02	<i>Cash Allowances</i>	00700 - 32
11.03	<i>Unit Price Work</i>	00700 - 32
<b>ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES</b>		00700 - 33
12.01	<i>Change of Contract Price</i>	00700 - 33
12.02	<i>Change of Contract Times</i>	00700 - 33
12.03	<i>Delays Beyond CONTRACTOR's Control</i>	00700 - 33
12.04	<i>Delays Within CONTRACTOR's Control</i>	00700 - 34
12.05	<i>Delays Beyond OWNER's and CONTRACTOR's Control</i>	00700 - 34
12.06	<i>Delay Damages</i>	00700 - 34
<b>ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK</b>		00700 - 34
13.01	<i>Notice of Defects</i>	00700 - 34
13.02	<i>Access to Work</i>	00700 - 34
13.03	<i>Tests and Inspections</i>	00700 - 34
13.04	<i>Uncovering Work</i>	00700 - 35
13.05	<i>OWNER May Stop the Work</i>	00700 - 35
13.06	<i>Correction or Removal of Defective Work</i>	00700 - 35

13.07	<i>Correction Period</i>	00700 - 35
13.08	<i>Acceptance of Defective Work</i>	00700 - 36
13.09	<i>OWNER May Correct Defective Work</i>	00700 - 36
<b>ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION</b>		00700 - 36
14.01	<i>Schedule of Values</i>	00700 - 36
14.02	<i>Progress Payments</i>	00700 - 37
14.03	<i>CONTRACTOR's Warranty of Title</i>	00700 - 38
14.04	<i>Substantial Completion</i>	00700 - 38
14.05	<i>Partial Utilization</i>	00700 - 39
14.06	<i>Final Inspection</i>	00700 - 39
14.07	<i>Final Payment</i>	00700 - 39
14.08	<i>Final Completion Delayed</i>	00700 - 40
14.09	<i>Waiver of Claims</i>	00700 - 40
<b>ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION</b>		00700 - 40
15.01	<i>OWNER May Suspend Work</i>	00700 - 40
15.02	<i>OWNER May Terminate for Cause</i>	00700 - 40
15.03	<i>OWNER May Terminate For Convenience</i>	00700 - 41
15.04	<i>CONTRACTOR May Stop Work or Terminate</i>	00700 - 41
<b>ARTICLE 16 - DISPUTE RESOLUTION</b>		00700 - 41
16.01	<i>Methods and Procedures</i>	00700 - 41
<b>ARTICLE 17 - MISCELLANEOUS</b>		00700 - 42
17.01	<i>Giving Notice</i>	00700 - 42
17.02	<i>Computation of Times</i>	00700 - 42
17.03	<i>Cumulative Remedies</i>	00700 - 42
17.04	<i>Survival of Obligations</i>	00700 - 42
17.05	<i>Controlling Law</i>	00700 - 42

## GENERAL CONDITIONS

### ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

#### 1.01 *Defined Terms*

A. Wherever used in the Contract Documents and printed with initial or all capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof.

1. *Addenda*--Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the Contract Documents.

2. *Agreement*--The written instrument which is evidence of the agreement between OWNER and CONTRACTOR covering the Work.

3. *Application for Payment*--The form acceptable to ENGINEER which is to be used by CONTRACTOR during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos*--Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid*--The offer or proposal of a bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

7. *Bidding Requirements*--The Advertisement or Invitation to Bid, Instructions to Bidders, Bid security form, if any, and the Bid form with any supplements.

8. *Bonds*--Performance and payment bonds and other instruments of security.

9. *Change Order*--A document recommended by ENGINEER which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the

Contract Times, issued on or after the Effective Date of the Agreement.

10. *Claim*--A demand or assertion by OWNER or CONTRACTOR seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract*--The entire and integrated written agreement between the OWNER and CONTRACTOR concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*--The Contract Documents establish the rights and obligations of the parties and include the Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders, and ENGINEER's written interpretations and clarifications issued on or after the Effective Date of the Agreement. Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents. Only printed or hard copies of the items listed in this paragraph are Contract Documents. Files in electronic media format of text, data, graphics, and the like that may be furnished by OWNER to CONTRACTOR are not Contract Documents.

13. *Contract Price*--The moneys payable by OWNER to CONTRACTOR for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*--The number of days or the dates stated in the Agreement to: (i) achieve Substantial Completion; and (ii) complete the Work so that it is ready for final payment as evidenced by ENGINEER's written recommendation of final payment.

15. *CONTRACTOR*--The individual or entity with whom OWNER has entered into the Agreement.

16. *Cost of the Work*--See paragraph 11.01.A for definition.

17. *Drawings*--That part of the Contract Documents prepared or approved by ENGINEER which graphically shows the scope, extent, and character of the Work to be performed by CONTRACTOR. Shop Drawings and other CONTRACTOR submittals are not Drawings as so defined.

18. *Effective Date of the Agreement*--The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. *ENGINEER*--The individual or entity named as such in the Agreement.

20. *ENGINEER's Consultant*--An individual or entity having a contract with ENGINEER to furnish services as ENGINEER's independent professional associate or consultant with respect to the Project and who is identified as such in the Supplementary Conditions.

21. *Field Order*--A written order issued by ENGINEER which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

22. *General Requirements*--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

23. *Hazardous Environmental Condition*--The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

24. *Hazardous Waste*--The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

25. *Laws and Regulations; Laws or Regulations*--Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

26. *Liens*--Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

27. *Milestone*--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

28. *Notice of Award*--The written notice by OWNER to the apparent successful bidder stating that upon timely compliance by the apparent successful bidder with the conditions precedent listed therein, OWNER will sign and deliver the Agreement.

29. *Notice to Proceed*--A written notice given by OWNER to CONTRACTOR fixing the date on which the Contract Times will commence to run and on which CONTRACTOR shall start to perform the Work under the Contract Documents.

30. *OWNER*--The individual, entity, public body, or authority with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be performed.

31. *Partial Utilization*--Use by OWNER of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.

32. *PCBs*--Polychlorinated biphenyls.

33. *Petroleum*--Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

34. *Project*--The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part as may be indicated elsewhere in the Contract Documents.

35. *Project Manual*--The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

36. *Radioactive Material*--Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

37. *Resident Project Representative*--The authorized representative of ENGINEER who may be assigned to the Site or any part thereof.

38. *Samples*--Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

39. *Shop Drawings*--All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for CONTRACTOR and submitted by CONTRACTOR to illustrate some portion of the Work.

40. *Site*--Lands or areas indicated in the Contract Documents as being furnished by OWNER upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by OWNER which are designated for the use of CONTRACTOR.

41. *Specifications*--That part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.

42. *Subcontractor*--An individual or entity having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the Site.

43. *Substantial Completion*--The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

44. *Supplementary Conditions*--That part of the Contract Documents which amends or supplements these General Conditions.

45. *Supplier*--A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with CONTRACTOR or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by CONTRACTOR or any Subcontractor.

46. *Underground Facilities*--All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases,

steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

47. *Unit Price Work*--Work to be paid for on the basis of unit prices.

48. *Work*--The entire completed construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

49. *Work Change Directive*--A written statement to CONTRACTOR issued on or after the Effective Date of the Agreement and signed by OWNER and recommended by ENGINEER ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

50. *Written Amendment*--A written statement modifying the Contract Documents, signed by OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the nonengineering or nontechnical rather than strictly construction-related aspects of the Contract Documents.

## 1.02 Terminology

### A. Intent of Certain Terms or Adjectives

1. Whenever in the Contract Documents the terms "as allowed," "as approved," or terms of like effect or import are used, or the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of ENGINEER as to the Work, it is intended that such action or determination will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The

use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.10 or any other provision of the Contract Documents.

**B. Day**

1. The word "day" shall constitute a calendar day of 24 hours measured from midnight to the next midnight.

**C. Defective**

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it does not conform to the Contract Documents or does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER's recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER at Substantial Completion in accordance with paragraph 14.04 or 14.05).

**D. Furnish, Install, Perform, Provide**

1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When "furnish," "install," "perform," or "provide" is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of CONTRACTOR, "provide" is implied.

E. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

## ARTICLE 2 - PRELIMINARY MATTERS

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### 2.01 *Delivery of Bonds*

A. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish.

### 2.02 *Copies of Documents*

A. OWNER shall furnish to CONTRACTOR up to ten copies of the Contract Documents. Additional copies will be furnished upon request at the cost of reproduction.

### 2.03 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

### 2.04 *Starting the Work*

A. CONTRACTOR shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

### 2.05 *Before Starting Construction*

A. *CONTRACTOR's Review of Contract Documents:* Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error, ambiguity, or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless CONTRACTOR knew or reasonably should have known thereof.

B. *Preliminary Schedules:* Within ten days after the Effective Date of the Agreement (unless otherwise specified

in the General Requirements), CONTRACTOR shall submit to ENGINEER for its timely review:

1. a preliminary progress schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2. a preliminary schedule of Shop Drawing and Sample submittals which will list each required submittal and the times for submitting, reviewing, and processing such submittal; and

3. a preliminary schedule of values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

**C. Evidence of Insurance:** Before any Work at the Site is started, CONTRACTOR and OWNER shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which CONTRACTOR and OWNER respectively are required to purchase and maintain in accordance with Article 5.

## 2.06 Preconstruction Conference

A. Within 20 days after the Contract Times start to run, but before any Work at the Site is started, a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in paragraph 2.05.B, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

## 2.07 Initial Acceptance of Schedules

A. Unless otherwise provided in the Contract Documents, at least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to review for acceptability to ENGINEER as provided below the schedules submitted in accordance with paragraph 2.05.B. CONTRACTOR shall have an additional ten days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to CONTRACTOR until acceptable schedules are submitted to ENGINEER.

1. The progress schedule will be acceptable to ENGINEER if it provides an orderly progression of the Work to completion within any specified Milestones and the Contract Times. Such acceptance will not impose on ENGINEER responsibility for the progress schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve CONTRACTOR from CONTRACTOR's full responsibility therefor.

2. CONTRACTOR's schedule of Shop Drawing and Sample submittals will be acceptable to ENGINEER if it provides a workable arrangement for reviewing and processing the required submittals.

3. CONTRACTOR's schedule of values will be acceptable to ENGINEER as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

## ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

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### 3.01 Intent

A. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to OWNER.

C. Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided in Article 9.

### 3.02 Reference Standards

A. *Standards, Specifications, Codes, Laws, and Regulations*

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids),

except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of OWNER, CONTRACTOR, or ENGINEER, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall any such provision or instruction be effective to assign to OWNER, ENGINEER, or any of ENGINEER's Consultants, agents, or employees any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

### 3.03 Reporting and Resolving Discrepancies

#### A. Reporting Discrepancies

1. If, during the performance of the Work, CONTRACTOR discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, CONTRACTOR shall report it to ENGINEER in writing at once. CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as required by paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in paragraph 3.04; provided, however, that CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any such conflict, error, ambiguity, or discrepancy unless CONTRACTOR knew or reasonably should have known thereof.

#### B. Resolving Discrepancies

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

### 3.04 Amending and Supplementing Contract Documents

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways: (i) a Written Amendment; (ii) a Change Order; or (iii) a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways: (i) a Field Order; (ii) ENGINEER's approval of a Shop Drawing or Sample; or (iii) ENGINEER's written interpretation or clarification.

### 3.05 Reuse of Documents

A. CONTRACTOR and any Subcontractor or Supplier or other individual or entity performing or furnishing any of the Work under a direct or indirect contract with OWNER: (i) shall not have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER or ENGINEER's Consultant, including electronic media editions; and (ii) shall not reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaption by ENGINEER. This prohibition will survive final payment, completion, and acceptance of the Work, or termination or completion of the Contract. Nothing herein shall preclude CONTRACTOR from retaining copies of the Contract Documents for record purposes.

## ARTICLE 4 - AVAILABILITY OF LANDS: SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

### 4.01 Availability of Lands

A. OWNER shall furnish the Site. OWNER shall notify CONTRACTOR of any encumbrances or restrictions not of general application but specifically related to use of the Site with which CONTRACTOR must comply in performing the Work. OWNER will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If CONTRACTOR and OWNER are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in OWNER's furnishing the Site, CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

B. Upon reasonable written request, OWNER shall furnish CONTRACTOR with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and OWNER's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

#### 4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that ENGINEER has used in preparing the Contract Documents; and
2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that ENGINEER has used in preparing the Contract Documents.

B. *Limited Reliance by CONTRACTOR on Technical Data Authorized:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any claim against OWNER, ENGINEER, or any of ENGINEER's Consultants with respect to:

1. the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
3. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

#### 4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If CONTRACTOR believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which CONTRACTOR is entitled to rely as provided in paragraph 4.02 is materially inaccurate; or
2. is of such a nature as to require a change in the Contract Documents; or
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), notify OWNER and ENGINEER in writing about such condition. CONTRACTOR shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *ENGINEER's Review:* After receipt of written notice as required by paragraph 4.03.A, ENGINEER will promptly review the pertinent condition, determine the necessity of OWNER's obtaining additional exploration or tests with respect thereto, and advise OWNER in writing (with a copy to CONTRACTOR) of ENGINEER's findings and conclusions.

#### C. *Possible Price and Times Adjustments*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in CONTRACTOR's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. such condition must meet any one or more of the categories described in paragraph 4.03.A; and
- b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of paragraphs 9.08 and 11.03.

2. CONTRACTOR shall not be entitled to any adjustment in the Contract Price or Contract Times if:

a. CONTRACTOR knew of the existence of such conditions at the time CONTRACTOR made a final commitment to OWNER in respect of Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for CONTRACTOR prior to CONTRACTOR's making such final commitment; or

c. CONTRACTOR failed to give the written notice within the time and as required by paragraph 4.03.A.

3. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in paragraph 10.05. However, OWNER, ENGINEER, and ENGINEER's Consultants shall not be liable to CONTRACTOR for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by CONTRACTOR on or in connection with any other project or anticipated project.

#### 4.04 *Underground Facilities*

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to OWNER or ENGINEER by the owners of such Underground Facilities, including OWNER, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. OWNER and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and

2. the cost of all of the following will be included in the Contract Price, and CONTRACTOR shall have full responsibility for:

a. reviewing and checking all such information and data;

b. locating all Underground Facilities shown or indicated in the Contract Documents;

c. coordination of the Work with the owners of such Underground Facilities, including OWNER, during construction, and

d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

#### B. *Not Shown or Indicated*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to OWNER and ENGINEER. ENGINEER will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility.

2. If ENGINEER concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that CONTRACTOR did not know of and could not reasonably have been expected to be aware of or to have anticipated. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, OWNER or CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

#### 4.05 *Reference Points*

A. OWNER shall provide engineering surveys to establish reference points for construction which in ENGINEER's judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work, shall protect and preserve the established reference points and property

monuments, and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

#### 4.06 Hazardous Environmental Condition at Site

**A. Reports and Drawings:** Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the ENGINEER in the preparation of the Contract Documents.

**B. Limited Reliance by CONTRACTOR on Technical Data Authorized:** CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER or any of ENGINEER's Consultants with respect to:

1. the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
3. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

**C. CONTRACTOR shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work.** CONTRACTOR shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by CONTRACTOR, Subcontractors, Suppliers, or anyone else for whom CONTRACTOR is responsible.

**D. If CONTRACTOR encounters a Hazardous Environmental Condition or if CONTRACTOR or anyone for whom CONTRACTOR is responsible creates a Hazardous**

Environmental Condition, CONTRACTOR shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by paragraph 6.16); and (iii) notify OWNER and ENGINEER (and promptly thereafter confirm such notice in writing). OWNER shall promptly consult with ENGINEER concerning the necessity for OWNER to retain a qualified expert to evaluate such condition or take corrective action, if any.

**E. CONTRACTOR shall not be required to resume Work in connection with such condition or in any affected area until after OWNER has obtained any required permits related thereto and delivered to CONTRACTOR written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely.** If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by CONTRACTOR, either party may make a Claim therefor as provided in paragraph 10.05.

**F. If after receipt of such written notice CONTRACTOR does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then OWNER may order the portion of the Work that is in the area affected by such condition to be deleted from the Work.** If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in paragraph 10.05. OWNER may have such deleted portion of the Work performed by OWNER's own forces or others in accordance with Article 7.

**G. To the fullest extent permitted by Laws and Regulations, OWNER shall indemnify and hold harmless CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing**

in this paragraph 4.06.E shall obligate OWNER to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing in this paragraph 4.06.F shall obligate CONTRACTOR to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

I. The provisions of paragraphs 4.02, 4.03, and 4.04 are not intended to apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

## ARTICLE 5 - BONDS AND INSURANCE

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### 5.01 *Performance, Payment, and Other Bonds*

A. CONTRACTOR shall furnish performance and payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, except as provided otherwise by Laws or Regulations or by the Contract Documents. CONTRACTOR shall also furnish such other Bonds as are required by the Contract Documents.

B. All Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

C. If the surety on any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements

of paragraph 5.01.B, CONTRACTOR shall within 20 days thereafter substitute another Bond and surety, both of which shall comply with the requirements of paragraphs 5.01.B and 5.02.

### 5.02 *Licensed Sureties and Insurers*

A. All Bonds and insurance required by the Contract Documents to be purchased and maintained by OWNER or CONTRACTOR shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue Bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

### 5.03 *Certificates of Insurance*

A. CONTRACTOR shall deliver to OWNER, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by OWNER or any other additional insured) which CONTRACTOR is required to purchase and maintain. OWNER shall deliver to CONTRACTOR, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by CONTRACTOR or any other additional insured) which OWNER is required to purchase and maintain.

### 5.04 *CONTRACTOR's Liability Insurance*

A. CONTRACTOR shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from CONTRACTOR's performance of the Work and CONTRACTOR's other obligations under the Contract Documents, whether it is to be performed by CONTRACTOR, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
2. claims for damages because of bodily injury, occupational sickness or disease, or death of CONTRACTOR's employees;
3. claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR's employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained: (i) by any person as a result of an offense directly or indirectly related to the employment of such person by CONTRACTOR, or (ii) by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance so required by this paragraph 5.04 to be purchased and maintained shall:

1. with respect to insurance required by paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) OWNER, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering CONTRACTOR's indemnity obligations under paragraphs 6.07, 6.11, and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least thirty days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the CONTRACTOR pursuant to paragraph 5.03 will so provide);

6. remain in effect at least until final payment and at all times thereafter when CONTRACTOR may be

correcting, removing, or replacing defective Work in accordance with paragraph 13.07; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment (and CONTRACTOR shall furnish OWNER and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to OWNER and any such additional insured of continuation of such insurance at final payment and one year thereafter).

## 5.05 OWNER's Liability Insurance

A. In addition to the insurance required to be provided by CONTRACTOR under paragraph 5.04, OWNER, at OWNER's option, may purchase and maintain at OWNER's expense OWNER's own liability insurance as will protect OWNER against claims which may arise from operations under the Contract Documents.

## 5.06 Property Insurance

A. Unless otherwise provided in the Supplementary Conditions, OWNER shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an additional insured;

2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by OWNER prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by ENGINEER;

5. allow for partial utilization of the Work by OWNER;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by OWNER, CONTRACTOR, and ENGINEER with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

B. OWNER shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with paragraph 5.07.

D. OWNER shall not be responsible for purchasing and maintaining any property insurance specified in this paragraph 5.06 to protect the interests of CONTRACTOR, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by CONTRACTOR, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

E. If CONTRACTOR requests in writing that other special insurance be included in the property insurance policies provided under paragraph 5.06, OWNER shall, if possible, include such insurance, and the cost thereof will be charged to CONTRACTOR by appropriate Change Order or Written Amendment. Prior to commencement of the Work

at the Site, OWNER shall in writing advise CONTRACTOR whether or not such other insurance has been procured by OWNER.

### 5.07 *Waiver of Rights*

A. OWNER and CONTRACTOR intend that all policies purchased in accordance with paragraph 5.06 will protect OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. OWNER and CONTRACTOR waive all rights against each other and their respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by OWNER as trustee or otherwise payable under any policy so issued.

B. OWNER waives all rights against CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to OWNER's property or the Work caused by, arising out of, or resulting from fire or other peril whether or not insured by OWNER; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by OWNER during partial utilization pursuant to paragraph 14.05, after Substantial Completion

pursuant to paragraph 14.04, or after final payment pursuant to paragraph 14.07.

C. Any insurance policy maintained by OWNER covering any loss, damage or consequential loss referred to in paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against CONTRACTOR, Subcontractors, ENGINEER, or ENGINEER's Consultants and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them.

#### 5.08 *Receipt and Application of Insurance Proceeds*

A. Any insured loss under the policies of insurance required by paragraph 5.06 will be adjusted with OWNER and made payable to OWNER as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of paragraph 5.08.B. OWNER shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order or Written Amendment.

B. OWNER as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to OWNER's exercise of this power. If such objection be made, OWNER as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, OWNER as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, OWNER as fiduciary shall give bond for the proper performance of such duties.

#### 5.09 *Acceptance of Bonds and Insurance; Option to Replace*

A. If either OWNER or CONTRACTOR has any objection to the coverage afforded by or other provisions of the Bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by paragraph 2.05.C. OWNER and CONTRACTOR shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the Bonds and insurance required

of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent Bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

#### 5.10 *Partial Utilization, Acknowledgment of Property Insurer*

A. If OWNER finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

### ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

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#### 6.01 *Supervision and Superintendence*

A. CONTRACTOR shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of OWNER or ENGINEER in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents. CONTRACTOR shall be responsible to see that the completed Work complies accurately with the Contract Documents.

B. At all times during the progress of the Work, CONTRACTOR shall assign a competent resident superintendent thereto who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the Site and shall have authority to act on behalf of CONTRACTOR. All communications given to or received from the superintendent shall be binding on CONTRACTOR.

## 6.02 *Labor; Working Hours*

A. CONTRACTOR shall provide competent, suitably qualified personnel to survey, lay out, and construct the Work as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, and CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday, or any legal holiday without OWNER's written consent (which will not be unreasonably withheld) given after prior written notice to ENGINEER.

## 6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the General Requirements, CONTRACTOR shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of OWNER. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

## 6.04 *Progress Schedule*

A. CONTRACTOR shall adhere to the progress schedule established in accordance with paragraph 2.07 as it may be adjusted from time to time as provided below.

1. CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in paragraph 2.07) proposed adjustments in the progress schedule that will not result in changing the Contract Times (or Milestones). Such adjustments will conform generally to the progress schedule then in effect and additionally will comply with

any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the progress schedule that will change the Contract Times (or Milestones) shall be submitted in accordance with the requirements of Article 12. Such adjustments may only be made by a Change Order or Written Amendment in accordance with Article 12.

## 6.05 *Substitutes and "Or-Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to ENGINEER for review under the circumstances described below.

1. *"Or-Equal" Items:* If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by ENGINEER as an "or-equal" item, in which case review and approval of the proposed item may, in ENGINEER's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment ENGINEER determines that: (i) it is at least equal in quality, durability, appearance, strength, and design characteristics; (ii) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole, and;

b. CONTRACTOR certifies that: (i) there is no increase in cost to the OWNER; and (ii) it will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Documents.

### 2. *Substitute Items*

a. If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR does not qualify as an "or-equal" item under

paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. CONTRACTOR shall submit sufficient information as provided below to allow ENGINEER to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR.

c. The procedure for review by ENGINEER will be as set forth in paragraph 6.05.A.2.d, as supplemented in the General Requirements and as ENGINEER may decide is appropriate under the circumstances.

d. CONTRACTOR shall first make written application to ENGINEER for review of a proposed substitute item of material or equipment that CONTRACTOR seeks to furnish or use. The application shall certify that the proposed substitute item will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified. The application will state the extent, if any, to which the use of the proposed substitute item will prejudice CONTRACTOR's achievement of Substantial Completion on time, whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute item and whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute item from that specified will be identified in the application, and available engineering, sales, maintenance, repair, and replacement services will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change, all of which will be considered by ENGINEER in evaluating the proposed substitute item. ENGINEER may require CONTRACTOR to furnish additional data about the proposed substitute item.

B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is shown or indicated in and expressly

required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by ENGINEER. CONTRACTOR shall submit sufficient information to allow ENGINEER, in ENGINEER's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in subparagraph 6.05.A.2.

C. *Engineer's Evaluation:* ENGINEER will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to paragraphs 6.05.A and 6.05.B. ENGINEER will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized until ENGINEER's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." ENGINEER will advise CONTRACTOR in writing of any negative determination.

D. *Special Guarantee:* OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any substitute.

E. *ENGINEER's Cost Reimbursement:* ENGINEER will record time required by ENGINEER and ENGINEER's Consultants in evaluating substitute proposed or submitted by CONTRACTOR pursuant to paragraphs 6.05.A.2 and 6.05.B and in making changes in the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) occasioned thereby. Whether or not ENGINEER approves a substitute item so proposed or submitted by CONTRACTOR, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER's Consultants for evaluating each such proposed substitute.

F. *CONTRACTOR's Expense:* CONTRACTOR shall provide all data in support of any proposed substitute or "or-equal" at CONTRACTOR's expense.

## 6.06 *Concerning Subcontractors, Suppliers, and Others*

A. CONTRACTOR shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to OWNER as indicated in paragraph 6.06.B), whether initially or as a replacement, against whom OWNER may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or

entities to be submitted to OWNER in advance for acceptance by OWNER by a specified date prior to the Effective Date of the Agreement, and if CONTRACTOR has submitted a list thereof in accordance with the Supplementary Conditions, OWNER's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. CONTRACTOR shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by OWNER of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of OWNER or ENGINEER to reject defective Work.

C. CONTRACTOR shall be fully responsible to OWNER and ENGINEER for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between OWNER or ENGINEER and any such Subcontractor, Supplier or other individual or entity, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

D. CONTRACTOR shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR.

E. CONTRACTOR shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with ENGINEER through CONTRACTOR.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for CONTRACTOR by a Subcontractor or Supplier will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor

or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in paragraph 5.06, the agreement between the CONTRACTOR and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against OWNER, CONTRACTOR, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, CONTRACTOR will obtain the same.

#### 6.07 *Patent Fees and Royalties*

A. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of OWNER or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees or agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

#### 6.08 *Permits*

A. Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits

and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto, such as plant investment fees.

#### 6.09 *Laws and Regulations*

A. CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR's compliance with any Laws or Regulations.

B. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, CONTRACTOR shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work; however, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve CONTRACTOR of CONTRACTOR's obligations under paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work may be the subject of an adjustment in Contract Price or Contract Times. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in paragraph 10.05.

#### 6.10 *Taxes*

A. CONTRACTOR shall pay all sales, consumer, use, and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

#### 6.11 *Use of Site and Other Areas*

##### A. *Limitation on Use of Site and Other Areas*

1. CONTRACTOR shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not

unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultant, and the officers, directors, partners, employees, agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against OWNER, ENGINEER, or any other party indemnified hereunder to the extent caused by or based upon CONTRACTOR's performance of the Work.

B. *Removal of Debris During Performance of the Work:* During the progress of the Work CONTRACTOR shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning:* Prior to Substantial Completion of the Work CONTRACTOR shall clean the Site and make it ready for utilization by OWNER. At the completion of the Work CONTRACTOR shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading Structures:* CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

#### 6.12 *Record Documents*

A. CONTRACTOR shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work

Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to ENGINEER for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to ENGINEER for OWNER.

#### 6.13 *Safety and Protection*

A. CONTRACTOR shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;
2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. CONTRACTOR shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property. All damage, injury, or loss to any property referred to in paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of OWNER or ENGINEER or ENGINEER's Consultant, or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them). CONTRACTOR's duties and

responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

#### 6.14 *Safety Representative*

A. CONTRACTOR shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

#### 6.15 *Hazard Communication Programs*

A. CONTRACTOR shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

#### 6.16 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, CONTRACTOR is obligated to act to prevent threatened damage, injury, or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If ENGINEER determines that a change in the Contract Documents is required because of the action taken by CONTRACTOR in response to such an emergency, a Work Change Directive or Change Order will be issued.

#### 6.17 *Shop Drawings and Samples*

A. CONTRACTOR shall submit Shop Drawings to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. All submittals will be identified as ENGINEER may require and in the number of copies specified in the General Requirements. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show ENGINEER the services, materials, and equipment CONTRACTOR proposes to provide and to enable ENGINEER to review the information for the limited purposes required by paragraph 6.17.E.

B. CONTRACTOR shall also submit Samples to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample

submittals. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalog numbers, and the use for which intended and otherwise as ENGINEER may require to enable ENGINEER to review the submittal for the limited purposes required by paragraph 6.17.E. The numbers of each Sample to be submitted will be as specified in the Specifications.

C. Where a Shop Drawing or Sample is required by the Contract Documents or the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER as required by paragraph 2.07, any related Work performed prior to ENGINEER's review and approval of the pertinent submittal will be at the sole expense and responsibility of CONTRACTOR.

#### D. *Submittal Procedures*

1. Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified:

a. all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

b. all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

c. all information relative to means, methods, techniques, sequences, and procedures of construction and safety precautions and programs incident thereto; and

d. CONTRACTOR shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's obligations under the Contract Documents with respect to CONTRACTOR's review and approval of that submittal.

3. At the time of each submittal, CONTRACTOR shall give ENGINEER specific written notice of such variations, if any, that the Shop Drawing or Sample submitted may have from the requirements of the Contract Documents, such notice to be in a written communication separate from the submittal; and, in addition, shall cause a specific notation to be made on each Shop

Drawing and Sample submitted to ENGINEER for review and approval of each such variation.

#### E. *ENGINEER's Review*

1. ENGINEER will timely review and approve Shop Drawings and Samples in accordance with the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER. ENGINEER's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. ENGINEER's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. ENGINEER's review and approval of Shop Drawings or Samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of each submittal as required by paragraph 6.17.D.3 and ENGINEER has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.17.D.1.

#### F. *Resubmittal Procedures*

1. CONTRACTOR shall make corrections required by ENGINEER and shall return the required number of corrected copies of Shop Drawings and submit as required new Samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals.

#### 6.18 *Continuing the Work*

A. CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except

as permitted by paragraph 15.04 or as OWNER and CONTRACTOR may otherwise agree in writing.

#### 6.19 *CONTRACTOR's General Warranty and Guarantee*

A. CONTRACTOR warrants and guarantees to OWNER, ENGINEER, and ENGINEER's Consultants that all Work will be in accordance with the Contract Documents and will not be defective. CONTRACTOR's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors, Suppliers, or any other individual or entity for whom CONTRACTOR is responsible; or
2. normal wear and tear under normal usage.

B. CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents:

1. observations by ENGINEER;
2. recommendation by ENGINEER or payment by OWNER of any progress or final payment;
3. the issuance of a certificate of Substantial Completion by ENGINEER or any payment related thereto by OWNER;
4. use or occupancy of the Work or any part thereof by OWNER;
5. any acceptance by OWNER or any failure to do so;
6. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by ENGINEER;
7. any inspection, test, or approval by others; or
8. any correction of defective Work by OWNER.

#### 6.20 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them from

and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage:

1. is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom; and
2. is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by any negligence or omission of an individual or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws and Regulations regardless of the negligence of any such individual or entity.

B. In any and all claims against OWNER or ENGINEER or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for CONTRACTOR or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of CONTRACTOR under paragraph 6.20.A shall not extend to the liability of ENGINEER and ENGINEER's Consultants or to the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

## ARTICLE 7 - OTHER WORK

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### 7.01 *Related Work at Site*

A. OWNER may perform other work related to the Project at the Site by OWNER's employees, or let other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to CONTRACTOR prior to starting any such other work; and

2. if OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in paragraph 10.05.

B. CONTRACTOR shall afford each other contractor who is a party to such a direct contract and each utility owner (and OWNER, if OWNER is performing the other work with OWNER's employees) proper and safe access to the Site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work and shall properly coordinate the Work with theirs. Unless otherwise provided in the Contract Documents, CONTRACTOR shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of ENGINEER and the others whose work will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between OWNER and such utility owners and other contractors.

C. If the proper execution or results of any part of CONTRACTOR's Work depends upon work performed by others under this Article 7, CONTRACTOR shall inspect such other work and promptly report to ENGINEER in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of CONTRACTOR's Work. CONTRACTOR's failure to so report will constitute an acceptance of such other work as fit and proper for integration with CONTRACTOR's Work except for latent defects and deficiencies in such other work.

### 7.02 *Coordination*

A. If OWNER intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;

2. the specific matters to be covered by such authority and responsibility will be itemized; and

3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, OWNER shall have sole authority and responsibility for such coordination.

## ARTICLE 8 - OWNER'S RESPONSIBILITIES

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### 8.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, OWNER shall issue all communications to CONTRACTOR through ENGINEER.

### 8.02 *Replacement of Engineer*

A. In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer to whom CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER.

### 8.03 *Furnish Data*

A. OWNER shall promptly furnish the data required of OWNER under the Contract Documents.

### 8.04 *Pay Promptly When Due*

A. OWNER shall make payments to CONTRACTOR promptly when they are due as provided in paragraphs 14.02.C and 14.07.C.

### 8.05 *Lands and Easements; Reports and Tests*

A. OWNER's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.01 and 4.05. Paragraph 4.02 refers to OWNER's identifying and making available to CONTRACTOR copies of reports of explorations

and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by ENGINEER in preparing the Contract Documents.

#### 8.06 *Insurance*

A. OWNER's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

#### 8.07 *Change Orders*

A. OWNER is obligated to execute Change Orders as indicated in paragraph 10.03.

#### 8.08 *Inspections, Tests, and Approvals*

A. OWNER's responsibility in respect to certain inspections, tests, and approvals is set forth in paragraph 13.03.B.

#### 8.09 *Limitations on OWNER's Responsibilities*

A. The OWNER shall not supervise, direct, or have control or authority over, nor be responsible for, CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. OWNER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

#### 8.10 *Undisclosed Hazardous Environmental Condition*

A. OWNER's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in paragraph 4.06.

#### 8.11 *Evidence of Financial Arrangements*

A. If and to the extent OWNER has agreed to furnish CONTRACTOR reasonable evidence that financial arrangements have been made to satisfy OWNER's obligations under the Contract Documents, OWNER's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

### ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

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#### 9.01 *OWNER'S Representative*

A. ENGINEER will be OWNER's representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER's representative during construction are set forth in the Contract Documents and will not be changed without written consent of OWNER and ENGINEER.

#### 9.02 *Visits to Site*

A. ENGINEER will make visits to the Site at intervals appropriate to the various stages of construction as ENGINEER deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of CONTRACTOR's executed Work. Based on information obtained during such visits and observations, ENGINEER, for the benefit of OWNER, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. ENGINEER will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. ENGINEER's efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, ENGINEER will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defective Work.

B. ENGINEER's visits and observations are subject to all the limitations on ENGINEER's authority and responsibility set forth in paragraph 9.10, and particularly, but without limitation, during or as a result of ENGINEER's visits or observations of CONTRACTOR's Work ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work.

#### 9.03 *Project Representative*

A. If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in providing more extensive observation of the Work. The responsibilities and authority and limitations thereon of any such Resident Project Representative and assistants will be as provided in paragraph 9.10 and in the Supplementary Conditions. If OWNER designates another

representative or agent to represent OWNER at the Site who is not ENGINEER's Consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

#### 9.04 *Clarifications and Interpretations*

A. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents as ENGINEER may determine necessary, which shall be consistent with the intent of and reasonably inferable from the Contract Documents. Such written clarifications and interpretations will be binding on OWNER and CONTRACTOR. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a written clarification or interpretation, a Claim may be made therefor as provided in paragraph 10.05.

#### 9.05 *Authorized Variations in Work*

A. ENGINEER may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on OWNER and also on CONTRACTOR, who shall perform the Work involved promptly. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of a Field Order, a Claim may be made therefor as provided in paragraph 10.05.

#### 9.06 *Rejecting Defective Work*

A. ENGINEER will have authority to disapprove or reject Work which ENGINEER believes to be defective, or that ENGINEER believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. ENGINEER will also have authority to require special inspection or testing of the Work as provided in paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

#### 9.07 *Shop Drawings, Change Orders and Payments*

A. In connection with ENGINEER's authority as to Shop Drawings and Samples, see paragraph 6.17.

B. In connection with ENGINEER's authority as to Change Orders, see Articles 10, 11, and 12.

C. In connection with ENGINEER's authority as to Applications for Payment, see Article 14.

#### 9.08 *Determinations for Unit Price Work*

A. ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR the ENGINEER's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER's written decision thereon will be final and binding (except as modified by ENGINEER to reflect changed factual conditions or more accurate data) upon OWNER and CONTRACTOR, subject to the provisions of paragraph 10.05.

#### 9.09 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work, the quantities and classifications of Unit Price Work, the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, and Claims seeking changes in the Contract Price or Contract Times will be referred initially to ENGINEER in writing, in accordance with the provisions of paragraph 10.05, with a request for a formal decision.

B. When functioning as interpreter and judge under this paragraph 9.09, ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by ENGINEER pursuant to this paragraph 9.09 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.07) will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter.

#### 9.10 *Limitations on ENGINEER's Authority and Responsibilities*

A. Neither ENGINEER's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority

or responsibility or the undertaking, exercise, or performance of any authority or responsibility by ENGINEER shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. ENGINEER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

C. ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. ENGINEER's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.

E. The limitations upon authority and responsibility set forth in this paragraph 9.10 shall also apply to ENGINEER's Consultants, Resident Project Representative, and assistants.

## ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

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### 10.01 *Authorized Changes in the Work*

A. Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Written Amendment, a Change Order, or a Work Change Directive. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If OWNER and CONTRACTOR are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change

Directive, a Claim may be made therefor as provided in paragraph 10.05.

### 10.02 *Unauthorized Changes in the Work*

A. CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in paragraph 3.04, except in the case of an emergency as provided in paragraph 6.16 or in the case of uncovering Work as provided in paragraph 13.04.B.

### 10.03 *Execution of Change Orders*

A. OWNER and CONTRACTOR shall execute appropriate Change Orders recommended by ENGINEER (or Written Amendments) covering:

1. changes in the Work which are: (i) ordered by OWNER pursuant to paragraph 10.01.A, (ii) required because of acceptance of defective Work under paragraph 13.08.A or OWNER's correction of defective Work under paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by ENGINEER pursuant to paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 6.18.A.

### 10.04 *Notification to Surety*

A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR's responsibility. The amount of each applicable Bond will be adjusted to reflect the effect of any such change.

## 10.05 *Claims and Disputes*

**A. Notice:** Written notice stating the general nature of each Claim, dispute, or other matter shall be delivered by the claimant to ENGINEER and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. Notice of the amount or extent of the Claim, dispute, or other matter with supporting data shall be delivered to the ENGINEER and the other party to the Contract within 60 days after the start of such event (unless ENGINEER allows additional time for claimant to submit additional or more accurate data in support of such Claim, dispute, or other matter). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to ENGINEER and the claimant within 30 days after receipt of the claimant's last submittal (unless ENGINEER allows additional time).

**B. ENGINEER's Decision:** ENGINEER will render a formal decision in writing within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any. ENGINEER's written decision on such Claim, dispute, or other matter will be final and binding upon OWNER and CONTRACTOR unless:

1. an appeal from ENGINEER's decision is taken within the time limits and in accordance with the dispute resolution procedures set forth in Article 16; or
2. if no such dispute resolution procedures have been set forth in Article 16, a written notice of intention to appeal from ENGINEER's written decision is delivered by OWNER or CONTRACTOR to the other and to ENGINEER within 30 days after the date of such decision, and a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction within 60 days after the date of such decision or within 60 days after Substantial Completion, whichever is later (unless otherwise agreed in writing by OWNER and CONTRACTOR), to exercise such rights or remedies as the appealing party may have with respect to such Claim, dispute, or other matter in accordance with applicable Laws and Regulations.

**C. If ENGINEER does not render a formal decision in writing within the time stated in paragraph 10.05.B, a decision denying the Claim in its entirety shall be deemed to have been issued 31 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.**

**D. No Claim for an adjustment in Contract Price or Contract Times (or Milestones) will be valid if not submitted in accordance with this paragraph 10.05.**

## ARTICLE 11 - COST OF THE WORK; CASH ALLOWANCES; UNIT PRICE WORK

### 11.01 *Cost of the Work*

**A. Costs Included:** The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to CONTRACTOR will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in paragraph 11.01.B.

1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Such employees shall include without limitation superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by OWNER.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

3. Payments made by CONTRACTOR to Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from subcontractors acceptable to OWNER and CONTRACTOR and shall deliver such bids to OWNER, who will then determine, with the advice of ENGINEER, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as CONTRACTOR's Cost of the Work and fee as provided in this paragraph 11.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

a. The proportion of necessary transportation, travel, and subsistence expenses of CONTRACTOR's employees incurred in discharge of duties connected with the Work.

b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of CONTRACTOR.

c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable,

and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by CONTRACTOR in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expressage, and similar petty cash items in connection with the Work.

i. When the Cost of the Work is used to determine the value of a Change Order or of a Claim, the cost of premiums for additional Bonds and insurance required because of the changes in the Work or caused by the event giving rise to the Claim.

j. When all the Work is performed on the basis of cost-plus, the costs of premiums for all Bonds and insurance CONTRACTOR is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnerships and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by CONTRACTOR, whether at the Site or in CONTRACTOR's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 11.01.A.1 or specifically covered by paragraph 11.01.A.4, all of which are to be

considered administrative costs covered by the CONTRACTOR's fee.

2. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the Site.

3. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.

4. Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraphs 11.01.A and 11.01.B.

**C. CONTRACTOR's Fee:** When all the Work is performed on the basis of cost-plus, CONTRACTOR's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, CONTRACTOR's fee shall be determined as set forth in paragraph 12.01.C.

**D. Documentation:** Whenever the Cost of the Work for any purpose is to be determined pursuant to paragraphs 11.01.A and 11.01.B, CONTRACTOR will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

## 11.02 Cash Allowances

A. It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums as may be acceptable to OWNER and ENGINEER. CONTRACTOR agrees that:

1. the allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. CONTRACTOR's costs for unloading and handling on the Site, labor, installation costs, overhead, profit, and other expenses contemplated for the allow-

ances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

B. Prior to final payment, an appropriate Change Order will be issued as recommended by ENGINEER to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

## 11.03 Unit Price Work

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by ENGINEER subject to the provisions of paragraph 9.08.

B. Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR's overhead and profit for each separately identified item.

C. OWNER or CONTRACTOR may make a Claim for an adjustment in the Contract Price in accordance with paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

2. there is no corresponding adjustment with respect any other item of Work; and

3. if CONTRACTOR believes that CONTRACTOR is entitled to an increase in Contract Price as a result of having incurred additional expense or OWNER believes that OWNER is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

## ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

### 12.01 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the ENGINEER and the other party to the Contract in accordance with the provisions of paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in paragraph 11.01) plus a CONTRACTOR's fee for overhead and profit (determined as provided in paragraph 12.01.C).

C. *CONTRACTOR's Fee:* The CONTRACTOR's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. for costs incurred under paragraphs 11.01.A.1 and 11.01.A.2, the CONTRACTOR's fee shall be 15 percent;

b. for costs incurred under paragraph 11.01.A.3, the CONTRACTOR's fee shall be five percent;

c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no

fixed fee is agreed upon, the intent of paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and CONTRACTOR will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

d. no fee shall be payable on the basis of costs itemized under paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

e. the amount of credit to be allowed by CONTRACTOR to OWNER for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in CONTRACTOR's fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in CONTRACTOR's fee shall be computed on the basis of the net change in accordance with paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

### 12.02 *Change of Contract Times*

A. The Contract Times (or Milestones) may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Times (or Milestones) shall be based on written notice submitted by the party making the claim to the ENGINEER and the other party to the Contract in accordance with the provisions of paragraph 10.05.

B. Any adjustment of the Contract Times (or Milestones) covered by a Change Order or of any Claim for an adjustment in the Contract Times (or Milestones) will be determined in accordance with the provisions of this Article 12.

### 12.03 *Delays Beyond CONTRACTOR's Control*

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of CONTRACTOR, the Contract Times (or Milestones) will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in paragraph 12.02.A. Delays beyond the control of CONTRACTOR shall include, but not be limited to, acts or neglect by OWNER, acts or neglect of utility owners or other contractors performing other work as contemplated by

Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

#### 12.04 *Delays Within CONTRACTOR's Control*

A. The Contract Times (or Milestones) will not be extended due to delays within the control of CONTRACTOR. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of CONTRACTOR.

#### 12.05 *Delays Beyond OWNER's and CONTRACTOR's Control*

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay.

#### 12.06 *Delay Damages*

A. In no event shall OWNER or ENGINEER be liable to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from:

1. delays caused by or within the control of CONTRACTOR; or
2. delays beyond the control of both OWNER and CONTRACTOR including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God, or acts or neglect by utility owners or other contractors performing other work as contemplated by Article 7.

B. Nothing in this paragraph 12.06 bars a change in Contract Price pursuant to this Article 12 to compensate CONTRACTOR due to delay, interference, or disruption directly attributable to actions or inactions of OWNER or anyone for whom OWNER is responsible.

to CONTRACTOR. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

#### 13.02 *Access to Work*

A. OWNER, ENGINEER, ENGINEER's Consultants, other representatives and personnel of OWNER, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. CONTRACTOR shall provide them proper and safe conditions for such access and advise them of CONTRACTOR's Site safety procedures and programs so that they may comply therewith as applicable.

#### 13.03 *Tests and Inspections*

A. CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. OWNER shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by paragraphs 13.03.C and 13.03.D below;
2. that costs incurred in connection with tests or inspections conducted pursuant to paragraph 13.04.B shall be paid as provided in said paragraph 13.04.B; and
3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, CONTRACTOR shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish ENGINEER the required certificates of inspection or approval.

D. CONTRACTOR shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for OWNER's and ENGINEER's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to OWNER and ENGINEER.

### ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

#### 13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which OWNER or ENGINEER has actual knowledge will be given

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by CONTRACTOR without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation.

F. Uncovering Work as provided in paragraph 13.03.E shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR's intention to cover the same and ENGINEER has not acted with reasonable promptness in response to such notice.

#### 13.04 *Uncovering Work*

A. If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER's observation and replaced at CONTRACTOR's expense.

B. If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment. If it is found that such Work is defective, CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefor as provided in paragraph 10.05. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Times (or Milestones), or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

#### 13.05 *OWNER May Stop the Work*

A. If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop

the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

#### 13.06 *Correction or Removal of Defective Work*

A. CONTRACTOR shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by ENGINEER, remove it from the Project and replace it with Work that is not defective. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

#### 13.07 *Correction Period*

A. If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for CONTRACTOR's use by OWNER or permitted by Laws and Regulations as contemplated in paragraph 6.11.A is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instructions: (i) repair such defective land or areas, or (ii) correct such defective Work or, if the defective Work has been rejected by OWNER, remove it from the Project and replace it with Work that is not defective, and (iii) satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or repaired or may have the rejected Work removed and replaced, and all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by CONTRACTOR.

B. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that

item may start to run from an earlier date if so provided in the Specifications or by Written Amendment.

C. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

D. CONTRACTOR's obligations under this paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

#### 13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, OWNER (and, prior to ENGINEER's recommendation of final payment, ENGINEER) prefers to accept it, OWNER may do so. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to OWNER's evaluation of and determination to accept such defective Work (such costs to be approved by ENGINEER as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by CONTRACTOR pursuant to this sentence. If any such acceptance occurs prior to ENGINEER's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and OWNER shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefor as provided in paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by CONTRACTOR to OWNER.

#### 13.09 *OWNER May Correct Defective Work*

A. If CONTRACTOR fails within a reasonable time after written notice from ENGINEER to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.06.A, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days written notice to CONTRACTOR, correct and remedy any such deficiency.

B. In exercising the rights and remedies under this paragraph, OWNER shall proceed expeditiously. In

connection with such corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the Site, take possession of all or part of the Work and suspend CONTRACTOR's services related thereto, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER's representatives, agents and employees, OWNER's other contractors, and ENGINEER and ENGINEER's Consultants access to the Site to enable OWNER to exercise the rights and remedies under this paragraph.

C. All Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by OWNER in exercising the rights and remedies under this paragraph 13.09 will be charged against CONTRACTOR, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, OWNER may make a Claim therefor as provided in paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of CONTRACTOR's defective Work.

D. CONTRACTOR shall not be allowed an extension of the Contract Times (or Milestones) because of any delay in the performance of the Work attributable to the exercise by OWNER of OWNER's rights and remedies under this paragraph 13.09.

### ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

#### 14.01 *Schedule of Values*

A. The schedule of values established as provided in paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to ENGINEER. Progress payments on account of Unit Price Work will be based on the number of units completed.

## 14.02 Progress Payments

### A. Applications for Payments

1. At least 20 days before the date established for each progress payment (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that OWNER has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect OWNER's interest therein, all of which must be satisfactory to OWNER.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of CONTRACTOR stating that all previous progress payments received on account of the Work have been applied on account to discharge CONTRACTOR's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

### B. Review of Applications

1. ENGINEER will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER or return the Application to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application.

2. ENGINEER's recommendation of any payment requested in an Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER's observations on the Site of the executed Work as an experienced and qualified design professional and on ENGINEER's review of the Application for Payment and the accompanying data and schedules, that to the best of ENGINEER's knowledge, information and belief:

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under paragraph 9.08, and to any other qualifications stated in the recommendation); and

c. the conditions precedent to CONTRACTOR's being entitled to such payment appear to have been fulfilled in so far as it is ENGINEER's responsibility to observe the Work.

3. By recommending any such payment ENGINEER will not thereby be deemed to have represented that: (i) inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract Documents; or (ii) that there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or entitle OWNER to withhold payment to CONTRACTOR.

4. Neither ENGINEER's review of CONTRACTOR's Work for the purposes of recommending payments nor ENGINEER's recommendation of any payment, including final payment, will impose responsibility on ENGINEER to supervise, direct, or control the Work or for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for CONTRACTOR's failure to comply with Laws and Regulations applicable to CONTRACTOR's performance of the Work. Additionally, said review or recommendation will not impose responsibility on ENGINEER to make any examination to ascertain how or for what purposes CONTRACTOR has used the moneys paid on account of the Contract Price, or to determine that title to any of the Work, materials, or equipment has passed to OWNER free and clear of any Liens.

5. ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER's opinion, it would be incorrect to make the representations to OWNER referred to in paragraph 14.02.B.2. ENGINEER may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests,

revise or revoke any such payment recommendation previously made, to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:

- a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
- b. the Contract Price has been reduced by Written Amendment or Change Orders;
- c. OWNER has been required to correct defective Work or complete Work in accordance with paragraph 13.09; or
- d. ENGINEER has actual knowledge of the occurrence of any of the events enumerated in paragraph 15.02.A.

#### C. *Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to OWNER with ENGINEER's recommendation, the amount recommended will (subject to the provisions of paragraph 14.02.D) become due, and when due will be paid by OWNER to CONTRACTOR.

#### D. *Reduction in Payment*

1. OWNER may refuse to make payment of the full amount recommended by ENGINEER because:

- a. claims have been made against OWNER on account of CONTRACTOR's performance or furnishing of the Work;
- b. Liens have been filed in connection with the Work, except where CONTRACTOR has delivered a specific Bond satisfactory to OWNER to secure the satisfaction and discharge of such Liens;
- c. there are other items entitling OWNER to a set-off against the amount recommended; or
- d. OWNER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.02.B.5.a through 14.02.B.5.c or paragraph 15.02.A.

2. If OWNER refuses to make payment of the full amount recommended by ENGINEER, OWNER must give CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action and promptly pay CONTRACTOR any amount remaining after deduction of the amount so withheld.

OWNER shall promptly pay CONTRACTOR the amount so withheld, or any adjustment thereto agreed to by OWNER and CONTRACTOR, when CONTRACTOR corrects to OWNER's satisfaction the reasons for such action.

3. If it is subsequently determined that OWNER's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by paragraph 14.02.C.1.

#### 14.03 *CONTRACTOR's Warranty of Title*

A. CONTRACTOR warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

#### 14.04 *Substantial Completion*

A. When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that ENGINEER issue a certificate of Substantial Completion. Promptly thereafter, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers the Work substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. OWNER shall have seven days after receipt of the tentative certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached list. If, after considering such objections, ENGINEER concludes that the Work is not substantially complete, ENGINEER will within 14 days after submission of the tentative certificate to OWNER notify CONTRACTOR in writing, stating the reasons therefor. If, after consideration of OWNER's objections, ENGINEER considers the Work substantially complete, ENGINEER will within said 14 days execute and deliver to OWNER and CONTRACTOR a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as ENGINEER believes justified after consideration of any objections from OWNER. At the time of delivery of the tentative certificate of Substantial Completion ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to division of responsibili-

ties pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless OWNER and CONTRACTOR agree otherwise in writing and so inform ENGINEER in writing prior to ENGINEER's issuing the definitive certificate of Substantial Completion, ENGINEER's aforesaid recommendation will be binding on OWNER and CONTRACTOR until final payment.

B. OWNER shall have the right to exclude CONTRACTOR from the Site after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

#### 14.05 *Partial Utilization*

A. Use by OWNER at OWNER's option of any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which OWNER, ENGINEER, and CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by OWNER for its intended purpose without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following conditions.

1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees that such part of the Work is substantially complete, CONTRACTOR will certify to OWNER and ENGINEER that such part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify OWNER and ENGINEER in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers that part of the Work to be substantially complete, the provisions of paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

2. No occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of paragraph 5.10 regarding property insurance.

#### 14.06 *Final Inspection*

A. Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, ENGINEER will promptly make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

#### 14.07 *Final Payment*

##### A. *Application for Payment*

1. After CONTRACTOR has, in the opinion of ENGINEER, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, Bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in paragraph 6.12), and other documents, CONTRACTOR may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by: (i) all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by subparagraph 5.04.B.7; (ii) consent of the surety, if any, to final payment; and (iii) complete and legally effective releases or waivers (satisfactory to OWNER) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in paragraph 14.07.A.2 and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full and an affidavit of CONTRACTOR that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or OWNER's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

## B. *Review of Application and Acceptance*

1. If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract Documents have been fulfilled, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing ENGINEER's recommendation of payment and present the Application for Payment to OWNER for payment. At the same time ENGINEER will also give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.09. Otherwise, ENGINEER will return the Application for Payment to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application for Payment.

## C. *Payment Becomes Due*

1. Thirty days after the presentation to OWNER of the Application for Payment and accompanying documentation, the amount recommended by ENGINEER will become due and, when due, will be paid by OWNER to CONTRACTOR.

## 14.08 *Final Completion Delayed*

A. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

## 14.09 *Waiver of Claims*

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by OWNER against CONTRACTOR, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from CONTRACTOR's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by CONTRACTOR against OWNER other than those previously made in writing which are still unsettled.

## ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

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### 15.01 *OWNER May Suspend Work*

A. At any time and without cause, OWNER may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to CONTRACTOR and ENGINEER which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if CONTRACTOR makes a Claim therefor as provided in paragraph 10.05.

### 15.02 *OWNER May Terminate for Cause*

A. The occurrence of any one or more of the following events will justify termination for cause:

1. CONTRACTOR's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.07 as adjusted from time to time pursuant to paragraph 6.04);

2. CONTRACTOR's disregard of Laws or Regulations of any public body having jurisdiction;

3. CONTRACTOR's disregard of the authority of ENGINEER; or

4. CONTRACTOR's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in paragraph 15.02.A occur, OWNER may, after giving CONTRACTOR (and the surety, if any) seven days written notice, terminate

the services of CONTRACTOR, exclude CONTRACTOR from the Site, and take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case, CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by OWNER arising out of or relating to completing the Work, such excess will be paid to CONTRACTOR. If such claims, costs, losses, and damages exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such claims, costs, losses, and damages incurred by OWNER will be reviewed by ENGINEER as to their reasonableness and, when so approved by ENGINEER, incorporated in a Change Order. When exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

C. Where CONTRACTOR's services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

#### 15.03 OWNER May Terminate For Convenience

A. Upon seven days written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy of OWNER, elect to terminate the Contract. In such case, CONTRACTOR shall be paid (without duplication of any items):

1. for completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. for expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

3. for all claims, costs, losses, and damages (including but not limited to all fees and charges of

engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. for reasonable expenses directly attributable to termination.

B. CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

#### 15.04 CONTRACTOR May Stop Work or Terminate

A. If, through no act or fault of CONTRACTOR, the Work is suspended for more than 90 consecutive days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within 30 days after it is submitted, or OWNER fails for 30 days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days written notice to OWNER and ENGINEER, and provided OWNER or ENGINEER do not remedy such suspension or failure within that time, terminate the Contract and recover from OWNER payment on the same terms as provided in paragraph 15.03. In lieu of terminating the Contract and without prejudice to any other right or remedy, if ENGINEER has failed to act on an Application for Payment within 30 days after it is submitted, or OWNER has failed for 30 days to pay CONTRACTOR any sum finally determined to be due, CONTRACTOR may, seven days after written notice to OWNER and ENGINEER, stop the Work until payment is made of all such amounts due CONTRACTOR, including interest thereon. The provisions of this paragraph 15.04 are not intended to preclude CONTRACTOR from making a Claim under paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to CONTRACTOR's stopping the Work as permitted by this paragraph.

### ARTICLE 16 - DISPUTE RESOLUTION

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#### 16.01 Methods and Procedures

A. Dispute resolution methods and procedures, if any, shall be as set forth in the Supplementary Conditions. If no method and procedure has been set forth, and subject to the provisions of paragraphs 9.09 and 10.05, OWNER and CONTRACTOR may exercise such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any dispute.

## ARTICLE 17 - MISCELLANEOUS

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### 17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

### 17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

### 17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

### 17.04 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Agreement.

### 17.05 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

**SECTION 00810**  
**SUPPLEMENTARY CONDITIONS TO THE GENERAL CONDITIONS**

These Supplementary Conditions to the General Conditions amend or supplement the Standard General Conditions of the Construction Contract (No. 1910-8, 1996 Edition) and the Funding Agency Edition No. (1910-8-FA, 1997 Edition) and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

**SC-1 DEFINITIONS AND TERMINOLOGY**

The terms used in these Supplementary Conditions which are defined in the Standard General Conditions of the Construction Contract have the meanings assigned to them in the General Conditions and as follows:

Add the following language at the end of the definition entitled "Agreement":

The definition of the word "Contract" is synonymous with the word "Agreement" and is used interchangeably in the Contract Documents.

As so amended this definition remains in effect.

Amend the definition entitled "Contract Documents" to include as Contract documents the following:

...Performance Bond, Labor and Materials Bond, Notice of Award, these Supplementary Conditions to the General Conditions, Permits approved and pending...

As so amended this definition remains in effect.

**SC-2.01 DELIVERY OF BONDS**

Add the following to Paragraph: 2.01.A

ENGINEER shall furnish to CONTRACTOR six copies of the Agreement and other Contract Documents bound therewith. CONTRACTOR shall execute the Agreement, insert executed copies of the required Bonds and Power of Attorney and Certificate of Insurance and submit all copies to Owner. Owner shall execute all copies and return two copies to the CONTRACTOR. Owner shall also furnish a counterpart or conformed copy to the ENGINEER and shall retain three copies.

## **SC- 2.03 NOTICE TO PROCEED**

Delete the first sentence of Paragraph 2.03A of the General Conditions and insert the following in its place:

Following the execution of the Contract by the OWNER and the CONTRACTOR, written Notice to Proceed with the Work shall be given by the OWNER to the CONTRACTOR. The Contract Time will commence to run on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within thirty days after the effective date of the agreement.

## **SC- 2.05 BEFORE STARTING CONSTRUCTION**

Add a new paragraph immediately after paragraph 2.05.B.3 of the General Conditions which is to read as follows:

2.05.B.4 CONTRACTOR shall submit a preliminary list of construction equipment with hourly rates, owned or rented by the CONTRACTOR and all Subcontractors that will be used in the performance of the Work. The equipment list will include information necessary to confirm the hourly rates per Paragraph 11.01.A.5.c of the General Conditions and these Supplementary Conditions including: make, model, and year of manufacture as well as the horse power, capacity or weight, and accessories.

## **SC- 2.05.C EVIDENCE OF INSURANCE**

Replace the beginning of the first sentence with:

Before OWNER will execute the Agreement and before any work at the site is started,...

## **SC-2.07 INITIAL ACCEPTANCE OF SCHEDULES**

Delete the first paragraph of 2.07.A of the General Conditions in its entirety and insert the following in its place.

Prior to the first application for payment all schedules and documents identified in paragraph 2.05.B shall be finalized and acceptable to the ENGINEER and OWNER. No progress payment shall be made to CONTRACTOR until the schedules are submitted to and acceptable to ENGINEER and OWNER as provided below. The progress schedule shall be CPM form or other acceptable format that shows estimated time for each work item, and starting and completion dates for each part of the Work. Acceptance of these schedules and documents by either ENGINEER

or OWNER will neither impose on ENGINEER or OWNER responsibility for the sequencing, scheduling or progress of the Work and will not interfere with or relieve CONTRACTOR from CONTRACTOR'S full responsibility therefore.

All remaining paragraphs of 2.07 shall remain unchanged.

#### **SC- 4.01 AVAILABILITY OF LANDS**

Add to Paragraph 4.01.C of the General Conditions the following:

If it is necessary or desirable that the CONTRACTOR use land outside of the OWNER's easement or right-of-way, the CONTRACTOR shall obtain consent from the property owner and tenant of the land. The CONTRACTOR shall not enter for materials delivery or occupy for any other purpose with men, tools, equipment, construction materials, or with materials excavated from the site, any private property outside the designated construction easement boundaries or right-of-way without written permission from the property owner and tenant.

#### **SC4.02 – SUBSURFACE AND PHYSICAL CONDITIONS**

Refer to the Special Provisions for a listing (if any) of the reports, explorations, tests, drawings, etc., of subsurface or physical conditions at or contiguous on the site that ENGINEER has used in preparing the Contract Documents.

#### **SC4.04 – UNDERGROUND FACILITIES**

Add the following new paragraph immediately after Paragraph 4.04.A.2.

3. At least 2 but not more than 10 business days before beginning any excavation, the CONTRACTOR shall according to MCA 69-4-501, notify all owners of underground facilities and coordinate the Work with the owners of such underground facilities. The information shown or indicated in the Contract Documents with respect to existing underground facilities is based on information and data obtained from the owners of the facilities without field exploration, and as such, OWNER and ENGINEER are not responsible for the accuracy or completeness of such information or data.

#### **SC4.06 – HAZARDOUS ENVIRONMENTAL CONDITION AT SITE**

Refer to the Special Provisions for identification of those reports and drawings (if any) relating to a hazardous environmental condition identified at the site, that have been utilized by the ENGINEER in the preparation of the Contract Documents.

## **SC- 4.03 DIFFERING SUBSURFACE OR PHYSICAL CONDITIONS**

Add the following to the end of Paragraphs 4.03.A.

CONTRACTOR to notify OWNER and ENGINEER in writing about differing subsurface or physical conditions within 15 days of discovery and before disturbing the subsurface as stated above.

No claim for an adjustment in the contract price or contract times (or Milestones) will be valid for differing subsurface or physical conditions if procedures of this paragraph 4.03 are not followed.

## **SC- 5.02 LICENSED SURETIES AND INSURERS**

Add the following to the end of Paragraph 5.02.A

Without limiting any of the other obligations or liabilities of the CONTRACTOR, CONTRACTOR shall secure and maintain such insurance from an insurance company (or companies) authorized to write insurance in the State of Montana, with minimum "A.M. Best Rating" of A-, VI, as will protect the CONTRACTOR, the vicarious acts of subcontractors, the Owner and the ENGINEER and their agents and employees from claims for bodily injury, or property damage which may arise from operations and completed operations under this Agreement. CONTRACTOR shall not commence work under this Agreement until such insurance has been obtained and certificates of insurance, with binders, or certified copies of the insurance policy shall have been filed with the OWNER and the ENGINEER.

All insurance coverage shall remain in effect throughout the life of the Agreement, except that the CONTRACTOR shall maintain the Commercial General Liability Policy including product and completed operations coverage for a period of at least one year following the substantial completion date for property damage resulting from occurrences during the agreement period.

## **SC- 5.04 CONTRACTOR'S LIABILITY INSURANCE**

Add the following new paragraphs immediately after Paragraph 5.04.B:

C. The limits of liability for the insurance required by Paragraph 5.04 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Law or Regulations:

1. Workers' Compensation, etc. under Paragraphs 5.04.1 and 5.04.2 of the General Conditions.

a.	State	Statutory
b.	Applicable Federal (e.g. Longshoremans)	Statutory
c.	Employer's Liability	<u>\$500,000.00</u>

2. CONTRACTOR's Liability Insurance under Paragraphs 5.04.A.3 through 5.04. A.6 of the General conditions which shall also include completed operations and product liability coverage.

a	GENERAL AGGREGATE	<u>\$3,000,000.00</u>
b.	Products-Completed Operations Aggregate	<u>\$3,000,000.00</u>
c	Personal and Advertising	
d	Each Occurrence (Bodily Injury and Property Damage)	<u>\$1,000,000.00</u>
e	Coverage will include:	
1.	Premises - Operations	
2.	Operations of Independent Contractor	
3.	Contractual Liability	
4.	Personal Injury	
5.	Products and Completed Operations	
6.	Broad Form Property Damage will include explosion, collapse, blasting and underground where applicable.	
7.	Per Project Aggregate Endorsement	

3. Automobile Liability under Paragraph 5.04.A.6 of the General Conditions:

a. Bodily Injury:  
Each Person \$1,000,000.00  
Each Accident \$1,000,000.00

Property Damage:  
Each Accident \$1,000,000.00

(or)

(or) b. Combined Single Limit \$1,000,000.00

Coverage to Include:

1. All Owned
2. Hired
3. Non-Owned

4. CONTRACTOR'S Liability Insurance under 5.04.A.3 through 5.04.A.6 may be satisfied by primary insurance or a combination of primary and excess or umbrella insurance. Primary occurrence limit cannot be less than \$1,000,000.00. Deductible not to exceed \$5,000.00 per occurrence on property damage.

5. Add a new paragraph at the end of Paragraph 5.04.B.1 of the General Conditions as follows:

The CONTRACTOR'S insurance coverage shall name the OWNER, and ENGINEER and Engineer's Consultants as an additional insured under Commercial General Liability, Automobile Liability, Excess or Umbrella polices.

6. The Contractual Liability coverage required by Paragraph 5.04.B.4. of the General Conditions shall provide coverage for not less than the following amounts:

Each Occurrence	<u>\$1,000,000.00</u>
Aggregate	<u>\$3,000,000.00</u>

**SC- 5.04.B.5 CANCELATION NOTICE**

Amend paragraph 5.04.B.5 of the General Conditions by striking out the words "30 days" and replacing them with the words "45 days" and as so amended paragraph 5.04.B.5 remains in effect.

## **SC- 5.06 PROPERTY INSURANCE**

Delete Article 5.06.A of the General Conditions in its entirety and insert the following in its place:

- A. CONTRACTOR shall purchase and maintain property insurance upon the work at the site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in these Supplementary Conditions or required by Laws and Regulations). This insurance shall:
  1. Include the interests of OWNER, CONTRACTOR, Subcontractors, Sub-Subcontractors ENGINEER, ENGINEER's Consultants, and any other persons or entities identified in the Supplementary Conditions, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;
  2. be written on a Builder's Risk or open peril or special causes of loss policy form that shall at least include insurance for physical loss and damage to the Work, temporary buildings, false work and Work in transit and shall insure against at least the following perils: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, and other perils as may be specifically required by the Supplementary Conditions.
  3. include expenses incurred in the repair or replacement of any insured property (including but not limited to the fees and charges of engineers and architects);
  4. cover materials and equipment in transit for incorporation in the Work or stored at the site or at another location prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by ENGINEER; and
  5. be endorsed to allow occupancy and partial utilization of the Work by OWNER.
  6. include testing and start-up; and
  7. be maintained in effect until final payment is made unless otherwise agreed to in writing by OWNER, CONTRACTOR, and ENGINEER with forty-five days written notice to each other additional insured to whom a certificate of insurance has been issued.

- B. CONTRACTOR shall be responsible for any deductible or self-insured retention.
- C. The policies of insurance required to be purchased and maintained by CONTRACTOR in accordance with this Paragraph SC5.06 shall comply with the requirements of Paragraph 5.06.C of the General Conditions.
- D. The policies of insurance required to be purchased and maintained by CONTRACTOR in accordance with this Article 5.06.A shall comply with the requirements of GC-5.06.C. The qualifications of the insurance company shall comply with the requirements of SC- 5.02.A.

### **SC-6.02 Working Hours**

Add the following to Paragraph 6.02.B:

Regular working hours are defined as 8:00 A.M. to 5:00 P.M. Emergency work may be done without prior permission.

### **SC-6.04 PROGRESS SCHEDULE**

Delete Paragraph 6.04.A.1 of the General Conditions in its entirety and replace with the following:

CONTRACTOR shall submit to ENGINEER with each application for payment an updated progress schedule reflecting the amount of work completed and adjustments to future work. Such adjustments will be acceptable to ENGINEER as providing an orderly progression of the Work to completion within any specified milestones and the Contract Time. No progress payment will be made to CONTRACTOR until the updated schedules are submitted to and acceptable to ENGINEER and OWNER. Review and acceptance of progress schedules by the ENGINEER will neither impose on ENGINEER responsibility for the sequencing, scheduling or progress of the Work, nor interfere with or relieve CONTRACTOR from CONTRACTOR'S full responsibility therefore.

### **SC-6.09 Laws and Regulations**

Add the following to the end of Paragraph A:

The CONTRACTOR shall give preference to Montana residents pursuant to Section 18-2-403 MCA, for that portion of the work performed in the State of Montana. The provisions of Section 18-2-409, MCA requires 50 percent of the workers on the project to be Montana residents.

### **SC- 6.13 SAFETY AND PROTECTION**

Add new paragraph to the end of paragraph 6.13.B of the General Conditions as follows:

It is expressly understood by the parties to this Agreement that the CONTRACTOR is

solely responsible for initiating, maintaining, and supervising safety precautions and programs in connection with the Work. The right of the OWNER and ENGINEER to observe or otherwise review the Work and operations shall not relieve the CONTRACTOR from any of his covenants and obligations hereunder. CONTRACTOR shall incorporate all safety requirements into his construction progress and work schedules including preconstruction and scheduled monthly safety meetings, posted safety rules, tailgate meetings, and site inspections by safety and other inspectors employed by the CONTRACTOR.

The CONTRACTOR shall be responsible for and shall take necessary precautions and provide all material and equipment to protect, shore, brace, support and maintain all underground pipes, conduits, drains, sewers, water mains, gas mains, cables, etc., and other underground construction uncovered in the proximity, or otherwise affected by the construction work performed by him. All pavement, surfacing, driveways, curbs, walks, buildings, grass areas, trees, utility poles or guy wires damaged by the CONTRACTOR'S operations in the performance of this work shall be repaired and/or replaced to the satisfaction of the OWNER, ENGINEER, and effected property owner at the CONTRACTOR'S expense. The CONTRACTOR shall also be responsible for all damage to streets, roads, highways, shoulders, ditches, embankments, culverts, bridges, or other public or private property or facility, regardless of location or character, which may be caused by moving, hauling, or otherwise transporting equipment, materials, or men to and from the work or any part of site thereof, whether by him or his subcontractors. The CONTRACTOR shall make satisfactory and acceptable arrangements with owner of, or the agency or authority having jurisdiction over, the damaged property or facility concerning its repair or replacement or payment of costs incurred in connection with said damage.

The CONTRACTOR shall conduct his work so as to interfere as little as possible with public travel, whether vehicular or pedestrian. Whenever it is necessary to cross, obstruct, or close roads, driveways, and walks, whether public or private, the CONTRACTOR shall obtain approval from the governing party and shall, at his own expense, provide and maintain suitable and safe bridges, detours, and other temporary expedients for the accommodation of public and private drives before interfering with them. The provisions for temporary expedients will not be required when the CONTRACTOR has obtained permission from the owner and tenant of the private property, or from the authority having jurisdiction over public property involved, to obstruct traffic at the designated point.

Safety provisions must be entirely adequate and meet with City or State and Federal regulations to protect the public on these streets and roads.

## **SC- 6.20 INDEMNIFICATION**

Add a new paragraph immediately after paragraph 6.20.A.2 of the General Conditions which is to read as follows:

3. While OWNER and ENGINEER may have the right under this Contract to observe or otherwise review the work, progress and operations of the CONTRACTOR, it is expressly understood and agreed that such observation shall not relieve the CONTRACTOR from any of its covenants and obligations hereunder.

### **SC-9.03 PROJECT REPRESENTATIVE**

Refer to the Special Provisions for identification of the responsibilities and authority and limitations of the ENGINEERS Resident Project Representative (if any).

### **SC- 11.01 COST OF THE WORK**

Delete paragraph 11.01.A.5.c of the General Conditions in its entirety and insert the following in its place:

11.01.A.5.c The cost for the use of all construction equipment and machinery and parts thereof whether owned by the Contractor or rented by others shall be calculated as follows. Cost will include the costs of transportation, loading, unloading, assembly, dismantling and removal thereof for equipment involved only in the changed portion of the work covered under the cost of the Work method. Transportation costs will not be included for equipment already on the site which is being used for other portions of the Work. The cost of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work. Hourly equipment and machinery rates shall be calculated from the Rental Rate Blue Book for Construction Equipment, and the Equipment List submitted according to SC 2.05 and SC 2.07, and as follows:

1. For working equipment, the hourly rate shall be the monthly rental rate divided by 176 hours per month plus the hourly operating cost.
2. For equipment on standby, the hourly rate shall be 50% of the monthly rental rate divided by 176 hours per month, and the hourly operating cost shall not be applied.
3. For specialized equipment rented for a short duration used for change order work or additional work not part of the scope of work bid, the equipment rental rates will be negotiated prior to the work being performed.

### **SC-11.03 UNIT PRICE WORK**

Delete paragraph 11.03 C.1 of the General Conditions in its entirety and insert the following in its place:

11.03.C.1 The total cost of a particular individual item of Unit Price Work amounts to

10% or more of the Contract Price which is the total sum of all schedules (if any), and the variation in the quantity of that particular item of Unit Price Work performed by Contractor differs by more than 25% from the estimated quantity of such item indicated in the Agreement; and

#### **SC- 14.02.A APPLICATIONS FOR PAYMENTS**

Add the following language at the end of paragraph 14.02.A.1 of the General Conditions:

Payments for materials in storage shall be based only upon the actual cost of the materials and equipment to CONTRACTOR and shall not include any overhead or profit. Bill of Sale, invoice or other document warranting clear title for materials in storage will be waived for the material in storage included in the first progress payment application. However, proof of payment and clear title must be submitted with Application No. 2 for all material included in Application No. 1. Without such documentation amounts paid for materials in storage will be deducted from subsequent payments. Beginning with the second application, all requests for payment for materials in storage shall be accompanied by Bill of Sale, invoice or other document warranting clear title as required above.

SC14.02.A.3 – Add the following to Paragraph 14.02.A.3:

In accordance with state law the Owner may accept deposited securities in lieu of cash retainage. Retainage may be used by the Owner to offset costs for any of the losses enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.d inclusive, 14.02.C.1.a. through 14.02.C.1.d inclusive, or 15.02.A.. In addition retainage may be used by the Owner to protect against loss from failure by the CONTRACTOR to complete necessary work and to offset any liquidated damages due Owner.

SC- 14.02.A.4 - Add a new paragraph after paragraph to 14.02.A.3 to read:

4. Each application for progress payment shall be accompanied by CONTRACTOR's updated progress schedule, shop drawings schedules, procurement schedules, and other data specified herein or reasonably required by OWNER or ENGINEER. The Owner reserves the right to require submission of monthly certified payrolls by the CONTRACTOR. After the first progress payment which may request payment for materials in storage without proof of payment, the CONTRACTOR must submit, with the following months payment request, evidence satisfactory to the Owner that such material has been paid for. Failure to provide this evidence for the first request and subsequent requests will result in withholding from subsequent progress payments the amount requested for materials in storage. 14.02.B.5.

## **SC-14.02.C PAYMENT BECOMES DUE**

Delete Paragraph 14.02.C of the General Conditions in its entirety and insert the following in its place:

- I. The OWNER will, upon presentation to him of the CONTRACTOR's Application for Payment with ENGINEER's recommendation, review and act upon said payment request once each month on or about the day of each month stipulated by the OWNER at the preconstruction conference. Payment will become due when OWNER approves the application for payment and when due, will be paid by OWNER to CONTRACTOR.

## **SC- 14.02.D.1.c**

Amend the sentence of Paragraph 14.02.D.1.c to read:

...entitling OWNER to a set-off against the amount recommended, including liquidated damages, or...

## **SC-14.03 CONTRACTORS WARRANTY OF TITLE**

Add the following at the end of Paragraph 14.03.A of the General Conditions:

Neither recommendation of any progress payment by ENGINEER nor payment by the OWNER to CONTRACTOR, nor any use or occupancy of the Work or any part thereof will release the CONTRACTOR from complying with the Contract Documents. Specifically the CONTRACTOR shall maintain in accordance with Article 5, property insurance on all Work, materials, and equipment whether incorporated in the project or not and whether included in an application for payment or not, for the full insurable value thereof. Passing title to OWNER for materials and equipment included in an application for payment does not relieve the CONTRACTOR of the CONTRACTOR'S obligation to provide insurance (including property insurance), as required in Article 5 of the General Conditions and these Supplementary Conditions. All insurance shall remain in effect as provided in Article 5.

## **SC- 14.05 PARTIAL UTILIZATION**

Add the following to Paragraph 14.05.A:

Owner has the right to take possession of or use any completed or substantially completed portions of the work at any time, but such taking possession or use will not be deemed an acceptance of any work not completed in accordance with the Contract Documents. Owner's use of any facilities so identified in the Contract Documents will not be grounds for extension of the contract time or change in the contract price. Owner's use of any facilities not specifically identified in the Contract Documents will be in accordance with conditions agreed to prior to such use, and any extra costs or

delays in completion incurred and properly claimed by CONTRACTOR will be equitably adjusted with a Change Order. Facilities substantially completed in accordance with the Contract Documents which are occupied or used by Owner prior to substantial completion of the entire work will be done in accordance with General Conditions 14.04. Guarantee periods for accepted or substantially completed work including mechanical and electrical equipment will commence upon the start of continuous use by Owner. All tests and instruction of Owner's personnel must be satisfactorily completed, and Owner shall assume responsibility for and operation of all facilities occupied or used except as may arise through portions of work not yet completed by CONTRACTOR. If the work has been substantially completed and the ENGINEER certifies that full completion thereof is materially delayed through no fault of the CONTRACTOR, the Owner shall, without terminating the Agreement, make payment of the balance due for the portion of the work fully completed and accepted.

#### **SC- 14.06 FINAL INSPECTION**

Add the following to Paragraph 14.06.A:

After CONTRACTOR has remedied all deficiencies to the satisfaction of the ENGINEER and delivered all construction records, maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, and other documents (all as required by the Contract Documents), Owner and CONTRACTOR shall be promptly notified in writing by ENGINEER that the work is acceptable.

#### **SC- 17.01 GIVING NOTICE**

Add the following to Paragraph 17.01.A:

The mailing address for giving notices to CONTRACTOR given in the Agreement is hereby designated as the place to which all notices, letters, and other communication to CONTRACTOR will be mailed or delivered. The mailing address for giving notices to Owner given in the Agreement is hereby designated as the place to which all notices, letters, and other communication to OWNER shall be mailed or delivered. Either party may change his address at any time by an instrument in writing delivered to ENGINEER and to other party.

END OF SECTION 00810



## **MISCELLANEOUS FORMS**

The Miscellaneous Forms including the Notice of Award, Notice to Proceed, Change Order, Work Directive Change, Application for Payment, and Certificate of Substantial Completion that are contained in this hard bound book or electronic format are EJCDC documents. These forms have been included to illustrate the appropriate use of the integrated set of documents. These forms should not be reproduced. Copies of these forms can be obtained from the National Society of Professional Engineers (<http://www.nspe.org> or 1-800-417-0348) or ACEC 1015 15<sup>th</sup> St., NW, Washington, DC 20005, or FAX 202-789-7220.



DATE OF ISSUANCE \_\_\_\_\_

EFFECTIVE DATE \_\_\_\_\_

OWNER \_\_\_\_\_

CONTRACTOR \_\_\_\_\_

Contract: \_\_\_\_\_

Project: \_\_\_\_\_

OWNER's Contract No. \_\_\_\_\_

ENGINEER's Contract No. \_\_\_\_\_

ENGINEER \_\_\_\_\_

You are directed to make the following changes in the Contract Documents:

Description:

Reason for Change Order:

Attachments: (List documents supporting change)

CHANGE IN CONTRACT PRICE:	
Original Contract Price	\$ _____
Net Increase (Decrease) from previous Change Orders No. ___ to ___:	\$ _____
Contract Price prior to this Change Order:	\$ _____
Net increase (decrease) of this Change Order:	\$ _____
Contract Price with all approved Change Orders:	\$ _____

CHANGE IN CONTRACT TIMES:	
Original Contract Times:	Substantial Completion: _____ Ready for final payment: _____ (days or dates)
Net change from previous Change Orders No. ___ to ___:	Substantial Completion: _____ Ready for final payment: _____ (days)
Contract Times prior to this Change Order:	Substantial Completion: _____ Ready for final payment: _____ (days or dates)
Net increase (decrease) this Change Order:	Substantial Completion: _____ Ready for final payment: _____ (days)
Contract Times with all approved Change Orders:	Substantial Completion: _____ Ready for final payment: _____ (days or dates)

RECOMMENDED:

By: \_\_\_\_\_  
ENGINEER (Authorized Signature)

Date: \_\_\_\_\_

APPROVED:

By: \_\_\_\_\_  
OWNER (Authorized Signature)

Date: \_\_\_\_\_

ACCEPTED:

By: \_\_\_\_\_  
CONTRACTOR (Authorized Signature)

Date: \_\_\_\_\_

# CHANGE ORDER

## INSTRUCTIONS

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### A. GENERAL INFORMATION

This document was developed to provide a uniform format for handling contract changes that affect Contract Price or Contract Times. Changes that have been initiated by a Work Change Directive must be incorporated into a subsequent Change Order if they affect Price or Times.

Changes that affect Contract Price or Contract Times should be promptly covered by a Change Order. The practice of accumulating Change Orders to reduce the administrative burden may lead to unnecessary disputes.

If Milestones have been listed in the Agreement, any effect of a Change Order thereon should be addressed.

For supplemental instructions and minor changes not involving a change in the Contract Price or Contract Times, a Field Order should be used.

### B. COMPLETING THE CHANGE ORDER FORM

Engineer normally initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by Contractor, or requests from Owner, or both.

Once Engineer has completed and signed the form, all copies should be sent to Owner or Contractor for approval, depending on whether the Change Order is a true order to the Contractor or the formalization of a negotiated agreement for a previously performed change. After approval by one contracting party, all copies should be sent to the other party for approval. Engineer should make distribution of executed copies after approval by both parties.

If a change only applies to price or to times, cross out the part of the tabulation that does not apply.

# CERTIFICATE OF SUBSTANTIAL COMPLETION

---

DATE OF ISSUANCE \_\_\_\_\_

---

OWNER \_\_\_\_\_

CONTRACTOR \_\_\_\_\_

Contract: \_\_\_\_\_

Project: \_\_\_\_\_

OWNER's Contract No. \_\_\_\_\_

ENGINEER's Project No. \_\_\_\_\_

---

This Certificate of Substantial Completion applies to all Work under the Contract Documents or to the following specified parts thereof:

To \_\_\_\_\_  
OWNER

And To \_\_\_\_\_  
CONTRACTOR

---

The Work to which this Certificate applies has been inspected by authorized representatives of OWNER, CONTRACTOR and ENGINEER, and that Work is hereby declared to be substantially complete in accordance with the Contract Documents on

---

## DATE OF SUBSTANTIAL COMPLETION

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of CONTRACTOR to complete all the Work in accordance with the Contract Documents. The items in the tentative list shall be completed or corrected by CONTRACTOR within \_\_\_\_\_ days of the above date of Substantial Completion.

The responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, heat, utilities, insurance and warranties and guarantees shall be as follows:

OWNER: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

CONTRACTOR: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The following documents are attached to and made a part of this Certificate:

*[For items to be attached see definition of Substantial Completion as supplemented and other specifically noted conditions precedent to achieving Substantial Completion as required by Contract Documents.]*

This certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of CONTRACTOR's obligation to complete the Work in accordance with the Contract Documents.

Executed by ENGINEER on \_\_\_\_\_  
Date

\_\_\_\_\_  
ENGINEER

By: \_\_\_\_\_  
(Authorized Signature)

CONTRACTOR accepts this Certificate of Substantial Completion on \_\_\_\_\_  
Date

\_\_\_\_\_  
CONTRACTOR

By: \_\_\_\_\_  
(Authorized Signature)

OWNER accepts this Certificate of Substantial Completion on \_\_\_\_\_  
Date

\_\_\_\_\_  
OWNER

By: \_\_\_\_\_  
(Authorized Signature)

# APPLICATION FOR PAYMENT NO. \_\_\_\_\_

To: \_\_\_\_\_ (OWNER)  
From: \_\_\_\_\_ (CONTRACTOR)  
Contract: \_\_\_\_\_  
Project: \_\_\_\_\_  
OWNER's Contract No. \_\_\_\_\_  
For Work accomplished through the date of: \_\_\_\_\_  
ENGINEER's Project No. \_\_\_\_\_

1. Original Contract Price:	\$ _____
2. Net change by Change Orders and Written Amendments (+ or -):	\$ _____
3. Current Contract Price (1 plus 2):	\$ _____
4. Total completed and stored to date:	\$ _____
5. Retainage (per Agreement):	
_____ % of completed Work:	\$ _____
_____ % of stored material:	\$ _____
Total Retainage:	\$ _____
6. Total completed and stored to date less retainage (4 minus 5):	\$ _____
7. Less previous Application for Payments:	\$ _____
8. <b>DUE THIS APPLICATION (6 MINUS 7):</b>	\$ _____

Accompanying Documentation:

## CONTRACTOR'S Certification:

The undersigned CONTRACTOR certifies that (1) all previous progress payments received from OWNER on account of Work done under the Contract referred to above have been applied on account to discharge CONTRACTOR's legitimate obligations incurred in connection with Work covered by prior Applications for Payment numbered 1 through \_\_\_\_\_ inclusive; (2) title of all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to OWNER at time of payment free and clear of all Liens, security interests and encumbrances (except such as are covered by a Bond acceptable to OWNER indemnifying OWNER against any such Lien, security interest or encumbrance); and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and not defective.

Dated \_\_\_\_\_  
CONTRACTOR

By: \_\_\_\_\_

State of \_\_\_\_\_  
County of \_\_\_\_\_  
Subscribed and sworn to before me this \_\_\_\_\_  
day of \_\_\_\_\_, \_\_\_\_\_

Notary Public  
My Commission expires: \_\_\_\_\_

Payment of the above AMOUNT DUE THIS APPLICATION is recommended.

Dated \_\_\_\_\_  
ENGINEER

By: \_\_\_\_\_

# APPLICATION FOR PAYMENT

## INSTRUCTIONS

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### A. GENERAL INFORMATION

The sample form of Schedule of Values is intended as a guide only. Many projects require a more extensive form with space for numerous items, descriptions of Change Orders, identification of variable quantity adjustments, summary of materials and equipment stored at the site and other information. It is expected that a separate form will be developed by Engineer and Contractor at the time Contractor's Schedule of Values is finalized. Note also that the format for retainage must be changed if the Contract permits (or the law provides), and Contractor elects to deposit securities in lieu of retainage. Refer to Article 14 of the General Conditions for provisions concerning payments to Contractor.

### B. COMPLETING THE FORM

The Schedule of Values, submitted and approved as provided in paragraphs 2.05.B.3 and 2.07 of the General Conditions, should be reproduced as appropriate in the space indicated on the Application for Payment form. Note that the cost of materials and equipment is often listed separately from the cost of installation. Also, note that each Unit Price is deemed to include Contractor's overhead and profit.

All Change Orders affecting the Contract Price should be identified and included in the Schedule of Values as required for progress payments.

The form is suitable for use in the Final Application for Payment as well as for Progress Payments; however, the required accompanying documentation is usually more extensive for final payment. All accompanying documentation should be identified in the space provided on the form.

### C. LEGAL REVIEW

All accompanying documentation of a legal nature, such as Lien waivers, should be reviewed by an attorney, and Engineer should so advise Owner.

# WORK CHANGE DIRECTIVE

No. \_\_\_\_\_

DATE OF ISSUANCE \_\_\_\_\_

EFFECTIVE DATE \_\_\_\_\_

OWNER \_\_\_\_\_

CONTRACTOR \_\_\_\_\_

Contract: \_\_\_\_\_

Project: \_\_\_\_\_

OWNER's Contract No. \_\_\_\_\_

ENGINEER's Project No. \_\_\_\_\_

You are directed to proceed promptly with the following change(s):

Description:

Purpose of Work Change Directive:

Attachments: (List documents supporting change)

If OWNER or CONTRACTOR believe that the above change has affected Contract Price any Claim for a Change Order based thereon will involve one or more of the following methods as defined in the Contract Documents.

Method of determining change in  
Contract Price:

- Unit Prices
- Lump Sum
- Cost of the Work \_\_\_\_\_

Estimated increase (decrease) in Contract Price:  
\$ \_\_\_\_\_.

If the change involves an increase, the estimated  
amount is not to be exceeded without further  
authorization.

Estimated increase (decrease) in Contract  
Times:

Substantial Completion: \_\_\_\_\_ days;  
Ready for final payment: \_\_\_\_\_ days.

RECOMMENDED:

AUTHORIZED:

By: \_\_\_\_\_

OWNER

EJCDC No. 1910-8-F (1996 Edition)

Prepared by the Engineers Joint Contract Documents Committee and endorsed by The Associated General Contractors of America and the Construction Specifications Institute.

## WORK CHANGE DIRECTIVE

### INSTRUCTIONS

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#### A. GENERAL INFORMATION

This document was developed for use in situations involving changes in the Work which, if not processed expeditiously, might delay the Project. These changes are often initiated in the field and may affect the Contract Price or the Contract Times. This is not a Change Order, but only a directive to proceed with Work that may be included in a subsequent Change Order.

For supplemental instructions and minor changes not involving a change in the Contract Price or the Contract Times a Field Order should be used.

#### B. COMPLETING THE WORK CHANGE DIRECTIVE FORM

Engineer initiates the form, including a description of the items involved and attachments.

Based on conversations between Engineer and Contractor, Engineer completes the following:

**METHOD OF DETERMINING CHANGE, IF ANY, IN CONTRACT PRICE:** Mark the method to be used in determining the final cost of Work involved and the estimated net effect on the Contract Price. If the change involves an increase in the Contract Price and the estimated amount is approached before the additional or changed Work is completed, another Work Change Directive must be issued to change the estimated price or Contractor may stop the changed Work when the estimated time is reached. If the Work Change Directive is not likely to change the Contract Price, the space for estimated increase (decrease) should be marked "Not Applicable".

Once Engineer has completed and signed the form, all copies should be sent to Owner for authorization because Engineer alone does not have authority to authorize changes in Price or Times. Once authorized by Owner, a copy should be sent by Engineer to Contractor. Price and Times may only be changed by Change Order signed by Owner and Contractor with Engineer's recommendation.

Paragraph 10.03.A.2 of the General Conditions requires that a Change Order be initiated and processed to cover any undisputed sum or amount of time for Work actually performed pursuant to this Work Change Directive.

Once the Work covered by this directive is completed or final cost and times are determined, Contractor should submit documentation for inclusion in a Change Order.

**THIS IS A DIRECTIVE TO PROCEED WITH A CHANGE THAT MAY AFFECT THE CONTRACT PRICE OR CONTRACT TIMES. A CHANGE ORDER, IF ANY, SHOULD BE CONSIDERED PROMPTLY.**

Dated \_\_\_\_\_

TO: \_\_\_\_\_  
(BIDDER)

ADDRESS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Contract: \_\_\_\_\_  
(Insert name of Contract as it appears in the Bidding Documents)

Project: \_\_\_\_\_

OWNER's Contract No. \_\_\_\_\_  
\_\_\_\_\_

You are notified that your Bid dated \_\_\_\_\_ for the above Contract has been considered. You are the apparent Successful Bidder and have been awarded a Contract for \_\_\_\_\_

(Indicate total Work, alternates or sections or Work awarded)

The Contract Price of your Contract is \_\_\_\_\_ Dollars (\$ \_\_\_\_\_).

*[Insert appropriate data if Unit Prices are used. Change language for Cost-Plus contracts]*

\_\_\_\_ copies of each of the proposed Contract Documents (except Drawings) accompany this Notice of Award. \_\_\_\_ sets of the Drawings will be delivered separately or otherwise made available to you immediately.

You must comply with the following conditions precedent within fifteen days of the date of this Notice of Award, that is by \_\_\_\_\_.

1. Deliver to the OWNER \_\_\_\_ fully executed counterparts of the Contract Documents. [Each of the Contract Documents must bear your signature on ( \_\_\_\_\_ )].
2. Deliver with the executed Contract Documents the Contract security (Bonds) as specified in the Instructions to Bidders (Article 20), [and] General Conditions (paragraph 5.01) [and Supplementary Conditions (paragraph SC-5.01).]

3. (List other conditions precedent).

Failure to comply with these conditions within the time specified will entitle OWNER to consider your Bid in default, to annul this Notice of Award and to declare your Bid security forfeited.

Within ten days after you comply with the above conditions, OWNER will return to you one fully executed counterpart of the Contract Documents.

(OWNER)

By: \_\_\_\_\_  
(AUTHORIZED SIGNATURE)

(TITLE)

Copy to ENGINEER  
(Use Certified Mail,  
Return Receipt Requested)

# NOTICE TO PROCEED

Dated \_\_\_\_\_

TO: \_\_\_\_\_  
(CONTRACTOR)

ADDRESS<sup>1</sup>: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Contract: \_\_\_\_\_  
(Insert name of Contract as it appears in the Contract Documents)

Project: \_\_\_\_\_

OWNER'S CONTRACT NO. \_\_\_\_\_

You are notified that the Contract Times under the above contract will commence to run on \_\_\_\_\_ . By that date, you are to start performing your obligations under the Contract Documents. In accordance with Article 4 of the Agreement the date of Substantial Completion is \_\_\_\_\_ and the date of readiness for final payment is \_\_\_\_\_ .

Before you may start any Work at the Site, paragraph 2.05.C of the General Conditions provides that you and Owner must each deliver to the other (with copies to Engineer and other identified additional insureds) certificates of insurance which each is required to purchase and maintain in accordance with the Contract Documents.

Also, before you may start any Work at the Site, you must  
(add other requirements)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
(OWNER)

By: \_\_\_\_\_  
(AUTHORIZED SIGNATURE)

\_\_\_\_\_  
(TITLE)

Copy to ENGINEER

\_\_\_\_\_  
<sup>1</sup>(Use Certified Mail, Return Receipt Requested)



# Performance Bond

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address): SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

## CONTRACT

Date:

Amount:

Description (Name and Location):

## BOND

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent or representative.

## CONTRACTOR AS PRINCIPAL

Company: (Corp. Seal)

Signature: \_\_\_\_\_

Name and Title: \_\_\_\_\_

## SURETY

Company: (Corp. Seal)

Signature: \_\_\_\_\_

Name and Title: \_\_\_\_\_

(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

## CONTRACTOR AS PRINCIPAL

Company: (Corp. Seal)

Signature: \_\_\_\_\_

Name and Title: \_\_\_\_\_

## SURETY

Company: (Corp. Seal)

Signature: \_\_\_\_\_

Name and Title: \_\_\_\_\_

EJCDC No. 1910-28-A (1996 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, and the American Institute of Architects.

heirs, executors, administrators, successors and assigns to the Owner for the performance of the Contract, which is incorporated herein by reference.

2. If the CONTRACTOR performs the Contract, the Surety and the CONTRACTOR have no obligation under this Bond, except to participate in conferences as provided in paragraph 3.1.

3. If there is no OWNER Default, the Surety's obligation under this Bond shall arise after:

3.1. The OWNER has notified the CONTRACTOR and the Surety at the addresses described in paragraph 10 below, that the OWNER is considering declaring a CONTRACTOR Default and has requested and attempted to arrange a conference with the CONTRACTOR and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Contract. If the OWNER, the CONTRACTOR and the Surety agree, the CONTRACTOR shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive the OWNER's right, if any, subsequently to declare a CONTRACTOR Default; and

3.2. The OWNER has declared a CONTRACTOR Default and formally terminated the CONTRACTOR's right to complete the Contract. Such CONTRACTOR Default shall not be declared earlier than twenty days after the CONTRACTOR and the Surety have received notice as provided in paragraph 3.1; and

3.3. The OWNER has agreed to pay the Balance of the Contract Price to:

3.3.1. The Surety in accordance with the terms of the Contract;

3.3.2. Another contractor selected pursuant to paragraph 4.3 to perform the Contract.

. When the OWNER has satisfied the conditions of paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

4.1. Arrange for the CONTRACTOR, with consent of the OWNER, to perform and complete the Contract; or

4.2. Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or

4.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the OWNER for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by the OWNER and the contractor selected with the OWNER's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the Bonds issued on the Contract, and pay to the OWNER the amount of damages as described in paragraph 6 in excess of the Balance of the Contract Price incurred by the OWNER resulting from the CONTRACTOR Default; or

4.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances;

4.4.1. After investigation, determine the amount for which it may be liable to the OWNER and, as soon as practicable after the amount is determined, tender payment therefor to the OWNER; or

4.4.2. Deny liability in whole or in part and notify the OWNER citing reasons therefor.

. If the Surety does not proceed as provided in paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen days after receipt of an additional written notice from the OWNER to the Surety demanding that the Surety perform its obligations under this Bond, and the OWNER shall be entitled to enforce any remedy available to the OWNER. If the Surety proceeds as provided in paragraph 4.4, and the OWNER refuses the payment tendered or the Surety has denied

enforce any remedy available to the OWNER.

6. After the OWNER has terminated the CONTRACTOR's right to complete the Contract, and if the Surety elects to act under paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the OWNER shall not be greater than those of the CONTRACTOR under the Contract, and the responsibilities of the OWNER to the Surety shall not be greater than those of the OWNER under the Contract. To a limit of the amount of this Bond, but subject to commitment by the OWNER of the Balance of the Contract Price to mitigation of costs and damages on the Contract, the Surety is obligated without duplication for:

6.1. The responsibilities of the CONTRACTOR for correction of defective Work and completion of the Contract;

6.2. Additional legal, design professional and delay costs resulting from the CONTRACTOR's Default, and resulting from the actions or failure to act of the Surety under paragraph 4; and

6.3. Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of the CONTRACTOR.

7. The Surety shall not be liable to the OWNER or others for obligations of the CONTRACTOR that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the OWNER or its heirs, executors, administrators, or successors.

8. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders and other obligations.

9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located and shall be instituted within two years after CONTRACTOR Default or within two years after the CONTRACTOR ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the address shown on the signature page.

11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted here from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

12. Definitions.

12.1. Balance of the Contract Price: The total amount payable by the OWNER to the CONTRACTOR under the Contract after all proper adjustments have been made, including allowance to the CONTRACTOR of any amounts received or to be received by the OWNER in settlement of insurance or other claims for damages to which the CONTRACTOR is entitled, reduced by all valid and proper payments made to or on behalf of the CONTRACTOR under the Contract.

12.2. Contract: The agreement between the OWNER and the CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.

12.3. CONTRACTOR Default: Failure of the CONTRACTOR, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.

12.4. OWNER Default: Failure of the OWNER, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

(FOR INFORMATION ONLY—Name, Address and Telephone)

AGENT or BROKER: OWNER'S REPRESENTATIVE (Engineer or other party):

# Payment Bond

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address): SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

**CONTRACT**

Date:

Amount:

Description (Name and Location):

**BOND**

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause the Payment Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

**CONTRACTOR AS PRINCIPAL**

Company:

(Corp. Seal)

**SURETY**

Company:

(Corp. Seal)

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

Name and Title:

Name and Title:

(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

**CONTRACTOR AS PRINCIPAL**

Company:

(Corp. Seal)

**SURETY**

Company:

(Corp. Seal)

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

Name and Title:

Name and Title:

EJCD No. 1910-28-B (1996 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, the American Institute of Architects, the American Subcontractors Association, and the Associated Specialty Contractors.

1. The CONTRACTOR and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the OWNER to pay for labor, materials and equipment furnished for use in the performance of the Contract, which is incorporated herein by reference.

2. With respect to the OWNER, this obligation shall be null and void if the CONTRACTOR:

2.1. Promptly makes payment, directly or indirectly, for all sums due Claimants, and

2.2. Defends, indemnifies and holds harmless the OWNER from all claims, demands, liens or suits by any person or entity who furnished labor, materials or equipment for use in the performance of the Contract, provided the OWNER has promptly notified the CONTRACTOR and the Surety (at the addresses described in paragraph 12) of any claims, demands, liens or suits and tendered defense of such claims, demands, liens or suits to the CONTRACTOR and the Surety, and provided there is no OWNER Default.

3. With respect to Claimants, this obligation shall be null and void if the CONTRACTOR promptly makes payment, directly or indirectly, for all sums due.

4. The Surety shall have no obligation to Claimants under this Bond until:

4.1. Claimants who are employed by or have a direct contract with the CONTRACTOR have given notice to the Surety (at the addresses described in paragraph 12) and sent a copy, or notice thereof, to the OWNER, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.

4.2. Claimants who do not have a direct contract with the CONTRACTOR:

1. Have furnished written notice to the CONTRACTOR and sent a copy, or notice thereof, to the OWNER, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials were furnished or supplied or for whom the labor was done or performed; and

2. Have either received a rejection in whole or in part from the CONTRACTOR, or not received within 30 days of furnishing the above notice any communication from the CONTRACTOR by which the CONTRACTOR had indicated the claim will be paid directly or indirectly; and

3. Not having been paid within the above 30 days, have sent a written notice to the Surety and sent a copy, or notice thereof, to the OWNER, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the CONTRACTOR.

i. If a notice required by paragraph 4 is given by the OWNER to the CONTRACTOR or to the Surety, that is sufficient compliance.

i. When the Claimant has satisfied the conditions of paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:

6.1. Send an answer to the Claimant, with a copy to the OWNER, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.

6.2. Pay or arrange for payment of any undisputed amounts.

7. The Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

8. Amounts owed by the OWNER to the CONTRACTOR under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any Performance Bond. By the CONTRACTOR furnishing and the OWNER accepting this Bond, they agree that all funds earned by the CONTRACTOR in the performance of the Contract are dedicated to satisfy obligations of the CONTRACTOR and the Surety under this Bond, subject to the OWNER's priority to use the funds for the completion of the Work.

9. The Surety shall not be liable to the OWNER, Claimants or others for obligations of the CONTRACTOR that are unrelated to the Contract. The OWNER shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

10. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related Subcontracts, purchase orders and other obligations.

11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by paragraph 4.1 or paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, the OWNER or the CONTRACTOR, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is, that this Bond shall be construed as a statutory Bond and not as a common law bond.

14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, the CONTRACTOR shall promptly furnish a copy of this Bond or shall permit a copy to be made.

## 15. DEFINITIONS

15.1. **Claimant:** An individual or entity having a direct contract with the CONTRACTOR or with a Subcontractor of the CONTRACTOR to furnish labor, materials or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of the CONTRACTOR and the CONTRACTOR's Subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

15.2. **Contract:** The agreement between the OWNER and the CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.

15.3. **OWNER Default:** Failure of the OWNER, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

(FOR INFORMATION ONLY--Name, Address and Telephone)

AGENCY or BROKER: OWNER'S REPRESENTATIVE (Engineer or other party):

**BID BOND****BIDDER (Name and Address):**

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**SURETY (Name and Address of Principal Place of Business):**

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**OWNER (Name and Address):**

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**BID**

BID DUE DATE: \_\_\_\_\_

PROJECT (Brief Description Including Location):  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_**BOND**

BOND NUMBER: \_\_\_\_\_

DATE (Not later than Bid due date): \_\_\_\_\_

PENAL SUM: \_\_\_\_\_

(Words)

(Figures)

IN WITNESS WHEREOF, Surety and Bidder, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Bid Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

BIDDER

SURETY

\_\_\_\_\_  
(Seal)

Bidder's Name and Corporate Seal

By: \_\_\_\_\_

Signature and Title

\_\_\_\_\_  
(Seal)

Surety's Name and Corporate Seal

By: \_\_\_\_\_

Signature and Title  
(Attach Power of Attorney)

Attest: \_\_\_\_\_

Signature and Title

Attest: \_\_\_\_\_

Signature and Title

Note: (1) Above addresses are to be used for giving required notice.  
(2) Any singular reference to Bidder, Surety, OWNER or other party shall be considered plural where applicable.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to pay to OWNER upon default of Bidder the penal sum set forth on the face of this Bond.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by OWNER) the executed Agreement required by the Bidding Documents and any performance and payment Bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
  - 3.1. OWNER accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by OWNER) the executed Agreement required by the Bidding Documents and any performance and payment Bonds required by the Bidding Documents, or
  - 3.2. All Bids are rejected by OWNER, or
  - 3.3. OWNER fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default by Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from OWNER, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of and any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by OWNER and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent or representative who executed this Bond on behalf of Surety to execute, seal and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer or proposal as applicable.

**BID BOND****BIDDER** (Name and Address):

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**SURETY** (Name and Address of Principal Place of Business):

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**OWNER** (Name and Address):

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**BID**

BID DUE DATE: \_\_\_\_\_

PROJECT (Brief Description Including Location):

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**BOND**

BOND NUMBER: \_\_\_\_\_

DATE (Not later than Bid due date): \_\_\_\_\_

PENAL SUM: \_\_\_\_\_

(Words)

(Figures)

IN WITNESS WHEREOF, Surety and Bidder, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Bid Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

BIDDER

SURETY

(Seal)

Bidder's Name and Corporate Seal

(Seal)

Surety's Name and Corporate Seal

By: \_\_\_\_\_

Signature and Title

By: \_\_\_\_\_

Signature and Title  
(Attach Power of Attorney)

Attest: \_\_\_\_\_

Signature and Title

Attest: \_\_\_\_\_

Signature and Title

Note: (1) Above addresses are to be used for giving required notice.  
 (2) Any singular reference to Bidder, Surety, OWNER or other party shall be considered plural where applicable.

# Payment Bond

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

## CONTRACT

Date:

Amount:

Description (Name and Location):

## BOND

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause the Payment Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

## CONTRACTOR AS PRINCIPAL

Company:

(Corp. Seal)

## SURETY

Company:

(Corp. Seal)

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

Name and Title:

Name and Title:

(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

## CONTRACTOR AS PRINCIPAL

Company:

(Corp. Seal)

## SURETY

Company:

(Corp. Seal)

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

Name and Title:

Name and Title:

EJCD No. 1910-28-B (1996 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, the American Institute of Architects, the American Subcontractors Association, and the Associated Specialty Contractors.

# Performance Bond

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

CONTRACT

Date:

Amount:

Description (Name and Location):

BOND

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause his Performance Bond to be duly executed on its behalf by its authorized officer, agent or representative.

CONTRACTOR AS PRINCIPAL

Company: (Corp. Seal)

SURETY

Company: (Corp. Seal)

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

Name and Title: \_\_\_\_\_

Name and Title: \_\_\_\_\_  
(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

CONTRACTOR AS PRINCIPAL

Company: (Corp. Seal)

SURETY

Company: (Corp. Seal)

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

Name and Title: \_\_\_\_\_

Name and Title: \_\_\_\_\_

EJCDC No. 1910-28-A (1996 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, and the American Institute of Architects.

# NOTICE OF AWARD

Dated \_\_\_\_\_

TO: \_\_\_\_\_  
(BIDDER)

ADDRESS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Contract: \_\_\_\_\_  
(Insert name of Contract as it appears in the Bidding Documents)

Project: \_\_\_\_\_

OWNER's Contract No. \_\_\_\_\_  
\_\_\_\_\_

You are notified that your Bid dated \_\_\_\_\_ for the above Contract has been considered. You are the apparent Successful Bidder and have been awarded a Contract for \_\_\_\_\_

(Indicate total Work, alternates or sections or Work awarded)

The Contract Price of your Contract is \_\_\_\_\_ Dollars (\$ \_\_\_\_\_).

*Insert appropriate data if Unit Prices are used. Change language for Cost-Plus contracts*

\_\_\_\_ copies of each of the proposed Contract Documents (except Drawings) accompany this Notice of Award. \_\_\_\_ sets of the Drawings will be delivered separately or otherwise made available to you immediately.

You must comply with the following conditions precedent within fifteen days of the date of this Notice of Award, that is by \_\_\_\_\_.

1. Deliver to the OWNER \_\_\_\_ fully executed counterparts of the Contract Documents. [Each of the Contract Documents must bear your signature on ( \_\_\_\_\_ )].
2. Deliver with the executed Contract Documents the Contract security (Bonds) as specified in the Instructions to Bidders (Article 20), [and] General Conditions (paragraph 5.01) [and Supplementary Conditions (paragraph SC-5.01).]

## NOTICE TO PROCEED

Dated \_\_\_\_\_

TO: \_\_\_\_\_  
(CONTRACTOR)

ADDRESS<sup>1</sup>: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Contract: \_\_\_\_\_  
(Insert name of Contract as it appears in the Contract Documents)

Project: \_\_\_\_\_

OWNER'S CONTRACT NO. \_\_\_\_\_

You are notified that the Contract Times under the above contract will commence to run on \_\_\_\_\_. By that date, you are to start performing your obligations under the Contract Documents. In accordance with Article 4 of the Agreement the date of Substantial Completion is \_\_\_\_\_ and the date of readiness for final payment is \_\_\_\_\_.

Before you may start any Work at the Site, paragraph 2.05.C of the General Conditions provides that you and Owner must each deliver to the other (with copies to Engineer and other identified additional insureds) certificates of insurance which each is required to purchase and maintain in accordance with the Contract Documents.

Also, before you may start any Work at the Site, you must  
(add other requirements)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(OWNER)

By: \_\_\_\_\_  
(AUTHORIZED SIGNATURE)

\_\_\_\_\_  
(TITLE)

Copy to ENGINEER

<sup>1</sup>(Use Certified Mail, Return Receipt Requested)

# APPLICATION FOR PAYMENT NO. \_\_\_\_\_

To: \_\_\_\_\_ (OWNER)  
From: \_\_\_\_\_ (CONTRACTOR)  
Contract: \_\_\_\_\_  
Project: \_\_\_\_\_  
OWNER's Contract No. \_\_\_\_\_ ENGINEER's Project No. \_\_\_\_\_  
For Work accomplished through the date of: \_\_\_\_\_

1. Original Contract Price:	\$ _____
2. Net change by Change Orders and Written Amendments (+ or -):	\$ _____
3. Current Contract Price (1 plus 2):	\$ _____
4. Total completed and stored to date:	\$ _____
5. Retainage (per Agreement): ____ % of completed Work:      \$ _____ ____ % of stored material:      \$ _____	
Total Retainage:	\$ _____
6. Total completed and stored to date less retainage (4 minus 5):	\$ _____
7. Less previous Application for Payments:	\$ _____
8. <b>DUE THIS APPLICATION (6 MINUS 7):</b>	\$ _____

Accompanying Documentation:

## CONTRACTOR'S Certification:

The undersigned CONTRACTOR certifies that (1) all previous progress payments received from OWNER on account of Work done under the Contract referred to above have been applied on account to discharge CONTRACTOR's legitimate obligations incurred in connection with Work covered by prior Applications for Payment numbered 1 through \_\_\_\_\_ inclusive; (2) title of all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to OWNER at time of payment free and clear of all Liens, security interests and encumbrances (except such as are covered by a Bond acceptable to OWNER indemnifying OWNER against any such Lien, security interest or encumbrance); and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and not defective.

Dated \_\_\_\_\_ CONTRACTOR

By: \_\_\_\_\_

State of \_\_\_\_\_  
County of \_\_\_\_\_  
Subscribed and sworn to before me this \_\_\_\_\_  
day of \_\_\_\_\_, \_\_\_\_\_

Notary Public  
My Commission expires: \_\_\_\_\_

Payment of the above AMOUNT DUE THIS APPLICATION is recommended.

Dated \_\_\_\_\_ ENGINEER

By: \_\_\_\_\_

EJCDC No. 1910-8-E (1996 Edition)

Prepared by the Engineers Joint Contract Documents Committee and endorsed by The Associated General Contractors of America and the Construction Specification Institute

Application No.:

Date:

ITEM	UNIT PRICE	ESTIMATED QUANTITY	SCHEDULE OF VALUES AMOUNT	QUANTITY COMPLETED	AMOUNT	%	MATERIAL STORED	AMOUNT COMPLETED AND STORED
1.	\$		\$		\$		\$	\$
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								
16.								
17.								
18.								
19.								
20.								
21.								
22.								
23.								
24.								
25.								
26.								
27.								
28.								
29.								
30.								
<b>TOTAL</b>								

Note: Total Schedule of Values Amount should equal the current Contract Price.

## CERTIFICATE OF SUBSTANTIAL COMPLETION

---

DATE OF ISSUANCE \_\_\_\_\_

---

OWNER \_\_\_\_\_  
CONTRACTOR \_\_\_\_\_  
Contract: \_\_\_\_\_  
Project: \_\_\_\_\_

OWNER's Contract No. \_\_\_\_\_ ENGINEER's Project No. \_\_\_\_\_

---

This Certificate of Substantial Completion applies to all Work under the Contract Documents or to the following specified parts thereof:

To \_\_\_\_\_  
OWNER

And To \_\_\_\_\_  
CONTRACTOR

---

The Work to which this Certificate applies has been inspected by authorized representatives of OWNER, CONTRACTOR and ENGINEER, and that Work is hereby declared to be substantially complete in accordance with the Contract Documents on

---

### DATE OF SUBSTANTIAL COMPLETION

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of CONTRACTOR to complete all the Work in accordance with the Contract Documents. The items in the tentative list shall be completed or corrected by CONTRACTOR within \_\_\_\_\_ days of the above date of Substantial Completion.

# CHANGE ORDER

No. \_\_\_\_\_

DATE OF ISSUANCE \_\_\_\_\_

EFFECTIVE DATE \_\_\_\_\_

OWNER \_\_\_\_\_

CONTRACTOR \_\_\_\_\_

Contract: \_\_\_\_\_

Project: \_\_\_\_\_

OWNER's Contract No. \_\_\_\_\_

ENGINEER's Contract No. \_\_\_\_\_

ENGINEER \_\_\_\_\_

You are directed to make the following changes in the Contract Documents:

Description:

Reason for Change Order:

Attachments: (List documents supporting change)

CHANGE IN CONTRACT PRICE:	
Original Contract Price	\$ _____
Net Increase (Decrease) from previous Change Orders No. ___ to ___:	\$ _____
Contract Price prior to this Change Order:	\$ _____
Net increase (decrease) of this Change Order:	\$ _____
Contract Price with all approved Change Orders:	\$ _____

CHANGE IN CONTRACT TIMES:	
Original Contract Times:	Substantial Completion: _____ Ready for final payment: _____ (days or dates)
Net change from previous Change Orders No. ___ to No. ___:	Substantial Completion: _____ Ready for final payment: _____ (days)
Contract Times prior to this Change Order:	Substantial Completion: _____ Ready for final payment: _____ (days or dates)
Net increase (decrease) this Change Order:	Substantial Completion: _____ Ready for final payment: _____ (days)
Contract Times with all approved Change Orders:	Substantial Completion: _____ Ready for final payment: _____ (days or dates)

RECOMMENDED:

APPROVED:

ACCEPTED:

By: \_\_\_\_\_  
ENGINEER (Authorized Signature)

By: \_\_\_\_\_  
OWNER (Authorized Signature)

By: \_\_\_\_\_  
CONTRACTOR (Authorized Signature)

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

## WORK CHANGE DIRECTIVE

No. \_\_\_\_\_

DATE OF ISSUANCE \_\_\_\_\_

EFFECTIVE DATE \_\_\_\_\_

OWNER \_\_\_\_\_

CONTRACTOR \_\_\_\_\_

Contract: \_\_\_\_\_

Project: \_\_\_\_\_

OWNER's Contract No. \_\_\_\_\_

ENGINEER's Project No. \_\_\_\_\_

You are directed to proceed promptly with the following change(s):

Description: \_\_\_\_\_

Purpose of Work Change Directive:

Attachments: (List documents supporting change)

If OWNER or CONTRACTOR believe that the above change has affected Contract Price any Claim for a Change Order based thereon will involve one or more of the following methods as defined in the Contract Documents.

Method of determining change in  
Contract Price:

- Unit Prices
- Lump Sum
- Cost of the Work \_\_\_\_\_

Estimated increase (decrease) in Contract Price:

\$ \_\_\_\_\_.

If the change involves an increase, the estimated amount is not to be exceeded without further authorization.

Estimated increase (decrease) in Contract

Times:

Substantial Completion: \_\_\_\_\_ days;  
Ready for final payment: \_\_\_\_\_ days.

RECOMMENDED:

AUTHORIZED:

ENGINEER

OWNER

By: \_\_\_\_\_

By: \_\_\_\_\_

EJCDC No. 1910-8-F (1996 Edition)

Prepared by the Engineers Joint Contract Documents Committee and endorsed by The Associated General Contractors of America and the Construction Specifications Institute

**SECTION 01010**  
**SUMMARY OF WORK**

**PART 1 – GENERAL**

**1.1.1 DESCRIPTION**

1.1.1 The Invitation to Bid contains a general description of the project work to be performed under this Contract. The Special Provisions and other documents contain additional information necessary to perform the work.

**1.2 Contract Documents**

1.2.1 Portions of the Contract Documents are written in the imperative mode. Except where specifically intended otherwise, the subject of all imperative statements is the CONTRACTOR. For example, “Furnish...” means “CONTRACTOR shall furnish...”, “Provide” means “CONTRACTOR shall provide...”.

1.2.2 Contract Documents are defined in Article 1, paragraph 1.01.A.12, General Conditions, as modified by Montana Public Works Standard Specifications, any supplemental conditions, and Article 9 of the Agreement Form.

1.2.3 The Contract Documents are intended to provide the basis for proper completion of the work suitable for the intended use of the OWNER. Comply with Article 3, General Conditions. Specifications and Drawings included in these contract documents establish the performance, quality requirements, location and general arrangement of materials and equipment, and establish the minimum standards for quality of workmanship and appearance. Anything not expressly set forth but which is reasonably implied or necessary for proper performance of the project shall be included.

1.2.4 The various portions of the Contract Documents, of which these specifications are a part, are essential parts of the Agreement, and a requirement occurring in any portion or part is binding as though occurring in all. All portions are intended to be complementary and to describe and provide for a complete work as referenced in Article 3, General Conditions. Unless specifically noted otherwise, in the case of discrepancy the following hierarchy shall be observed:

- 1.2.4.1 Addenda, which will govern over;
- 1.2.4.2 Special Provisions, which will govern over;
- 1.2.4.3 Standard Modifications, which will govern over;
- 1.2.4.4 Supplementary Specifications, which will govern over;
- 1.2.4.5 Project Drawings, which will govern over;
- 1.2.4.6 These Specifications and Standard Drawings, which will govern over;
- 1.2.4.7 Montana Department of Transportation Standard Specifications for Road and Bridge Construction

The bound copy of the Montana Public Works Standard Specification, as distributed by the Montana Contractor's Association, Inc., will govern as the legal set of these specifications over any unbound copy, or any CD-ROM or floppy disk versions.

1.2.5 A requirement mentioned in one part/section of the Contract Documents shall be considered as having been mentioned in all parts/sections.

### 1.3 Work Sequence

1.3.1 Comply with paragraph 2.05.B.1, General Conditions and Milestones specified in the Contract Documents.

1.3.2 Submit detail schedules as specified in the Contract Documents.

1.3.3 Field verify dimensions indicated on the drawings before fabricating or ordering materials. Do not scale drawings.

1.3.4 Notify ENGINEER/OWNER of existing conditions differing from those indicated on the drawings. Comply with paragraph 4.03, General Conditions. Verify the existence and location of underground utilities along the route of the proposed work. Omission of an existing or previous abandoned utility location on the Drawings is not to be considered as its nonexistence. Inclusion of existing utility locations on the Drawings is not to be considered as its definite location. Do not remove or alter existing utilities without prior written approval.

### 1.4 Contractor Use of Premises

1.4.1 Comply with paragraph 6.11, General Conditions, and as specified in the Contract Documents.

1.4.2 Do not park vehicles or equipment or store materials on private property without written permission from the property owner. Provide ENGINEER/OWNER with copy of authorization.

### 1.5 Owner- Furnished Items

1.5.1 OWNER furnished items are listed in the Contract Documents.

## **PART 2 PRODUCT – NOT USED**

## **PART 3 EXECUTION – NOT USED**

## **PART 4 MEASUREMENT AND PAYMENT**

### 4.1 Payment

4.1.1 Unless specifically noted otherwise, the work of Division 1 shall be incidental to the work, and no separate payment shall be made

End Section 01010

## SECTION 02225

### FLOWABLE FILL

#### PART 1 - GENERAL

##### 1.1 DESCRIPTION

This work consists of furnishing and placing Flowable Fill to the lines and grades shown on the plans as backfill in trenches and/or at other locations. Flowable Fill is a self-compacting cementitious material using mineral aggregates (sand and/or gravel), native or excavated materials, fly ash/cement, water, air entraining solution and (optionally) other admixtures. Flowable Fill is also known as Controlled Low-Strength Material (CLSM) and Controlled Density Fill (CDF). Flowable Fill is only permitted when specifically called out in the contract documents or approved by **ENGINEER**.

##### 1.2 REFERENCES

The current publications listed below form a part of the specification.

ASTM D4832	Preparation/Testing of Soil-Cement Slurry Test Cylinders
ASTM C39	Test Method for Compressive Strength of Cylindrical Concrete Specimens
ASTM D6023	Standard Test Method for Unit Weight
ASTM C150	Specification for Portland Cement
ASTM C618	Specification for Fly Ash
ASTM C494	Specification for Chemical Admixture for Concrete
ASTM E329	Practice for Use in the Evaluation of Testing and Inspection Agencies as Used in Construction
ASTM C1064	Temperature
ASTM C117	Materials Finer Than 75 $\mu$ m (No. 200) Sieve in Mineral

	Aggregates by Washing
ASTM D5971	Practice for Sampling Freshly Mixed CLSM
ASTM C136	Sieve Analysis of Fine and Coarse Aggregate
ASTM D4318	Test Method for Liquid Limit, Plastic Limit and Plasticity Index of Soils
ASTM C94	Ready Mix Concrete
ACI 301	Standard Specifications for Structural Concrete for Buildings
ACI 304	Guide for Measuring, Mixing, Transporting and Placing Concrete

### 1.3 TESTING

The **ENGINEER** may perform occasional quality assurance tests on the flowable fill consisting of slump, air content measurements and casting three cylinders for compressive strength testing. The required compressive strength test method and required range are described in section 2.1.3, Compressive Strength below.

The **CONTRACTOR** is to provide the **ENGINEER** with a mix design by either trial batch or field experience methods to verify the required compressive strength of the flowable fill at the 28 day age. Mix design requirements are described in Section 2.1.2, Proportions; and in Section 2.1.3, Compressive Strength. Proportions shall be selected on the basis of unconfined, air cured compressive strength test specimens.

## **PART 2 - PRODUCTS**

### 2.1 MIXTURE OF MATERIALS

Provide a mixture of the materials described below to produce a self-compacting cementitious material batched on a per cubic yard basis.

#### 2.1.1 MATERIALS

- a. Portland Cement. Portland cement shall conform to the requirements of ASTM C 150, Type II.

- b. Fly Ash. Fly Ash shall conform to ASTM C618, Class F.
- c. Coarse Aggregate, Fine Aggregate and Native Materials. Any aggregate gradation which produces performance characteristics of the flowable fill specified herein will be accepted, except as follows: The amount of material passing the #200 sieve shall not exceed 20 percent. Also, liquid limit and plasticity index shall not exceed 25 and 5, respectively.
- d. Water. Water used in mixing shall be free of oil, salt, acid, alkali, sugar, vegetable matter or other substances injurious to the finished product.
- e. Chemical Admixtures. Chemical Admixtures shall conform to the requirements of ASTM C494.

#### 2.1.2 PROPORTIONS

A variety of sand/gravel aggregates, and/or native materials meeting above requirements in conjunction with appropriate amounts of Portland cement and fly ash, air entraining solution, and (optionally) other admixtures may be used to produce the required mix properties described herein.

The contractor shall submit, to the **Engineer**, a mix design based upon a trial batch or field experience, including the proportions and sources of all constituent materials, air entraining and (optionally) other admixtures, expressed as cubic yard batch weights. The mix shall contain a minimum of 50 pounds of cement and up to 250 pounds fly ash per cubic yard, with the remainder of the volumes composed of aggregates, water, and any approved admixtures. Measured compressive strength, air content and yield for the mix design trial batch ( or for the field experience based mix design) shall be submitted.

#### 2.1.3 COMPRESSIVE STRENGTH

Flowable Fill shall typically be designed to achieve a 28 day compressive strength of 30 to 500 psi when tested in accordance with ASTM C 39. Excavatable mixes should be designed to attain 28 day strengths in the range of 30 - 150 psi. Test specimens shall be made in accordance with ASTM D4332. Compressive strength tests shall be performed at frequencies of at least one test set per 150 yd<sup>3</sup> and at least one test set per day of placement.

#### 2.1.4 CONSISTENCY

Consistency of the fresh mixture shall be such that the mixture may be readily placed

without segregation. High flowability material generally has a slump greater than 8 inches. As an alternative to slump testing, desired consistency may be approximated by filling an open-ended 3 inch diameter cylinder, 6 inches high, with the mixture and cylinder immediately pulled straight up. The correct consistency of the mixture will produce an approximate 8 inch diameter circular type spread without segregation. Adjustments of the proportions of constituents may be made to achieve proper solid suspension and optimum flowability. However, strength requirements and proper yield shall be maintained for the actual batch weights.

## PART 3 - EXECUTION

### 3.1 CONSTRUCTION

Comply with ACI 304 and ASTM C94 for Measuring, Mixing, Transporting and Placing Flowable Fill, and as herein specified.

#### 3.1.1 LIMITATIONS OF PLACEMENT

Do not place CLSM on frozen ground. Mix and place only when the air temperature is at least 35 degrees F and rising. At the time of placement Flowable Fill shall be at least 40 degrees F. Stop mixing and placement when the air temperature is 40 degrees F and falling.

Flowable backfill shall be placed by methods that preserve the quality of the material in terms of compressive strength, flow, homogeneity, plasticity and workability. The material shall be transported, placed, and/or consolidated so that it flows easily around, adjacent to and under structures. It shall have the flow, consistency, and workability such that the material is self-compacting.

Protect freshly placed Flowable Fill from premature drying, excessive cold, or hot temperatures. The air in contact with the backfill surface shall be maintained at temperatures above freezing. Begin curing immediately following placement before the backfill has dried. Continue with curing for 7 days in accordance with ACI 301 or until the backfill has attained 28 day strength requirement. This strength is to be determined prior to any load applications or construction activity, unless otherwise directed by **Engineer**.

## PART 4 - MEASUREMENT AND PAYMENT

#### 4.1 GENERAL

This item shall be measured and paid for at the contract unit price per cubic yard for "Flowable Fill". Payment shall include all labor, materials, equipment and incidentals necessary to provide, load, haul, place and consolidate the flowable fill. Measurement shall be based upon batch delivery tickets provided to the **ENGINEER** at the time of placement.



**SECTION 02234**  
**SUB BASE COURSE**

**PART 1 GENERAL**

**1.1 DESCRIPTION**

This work is constructing a sub-base course of either crushed or un-crushed materials meeting the specified gradations and other quality criteria specified herein.

**PART 2 PRODUCTS**

**2.1 GENERAL**

Furnish select sub-base material meeting the applicable aggregate quality requirements of Section 02232; AGGREGATES FOR SURFACING AND ASPHALT PLANT MIXES.

**2.2 UN CRUSHED SUB BASE**

Furnish material consisting of hard, durable stone, gravel or other similar materials mixed or blended with sand, stone dust, or other binding or filler materials produced from approved sources, providing a uniform mixture meeting these specifications and compacted into a dense and well-bonded sub base. Oversize material of acceptable quality may be crushed and used in the base material, if the blend meets the specified gradations.

Assure the material retained on the No. 4 sieve has a wear not exceeding 50 percent at 500 revolutions as determined by AASHTO T96 (Los Angeles Abrasion Test).

**2.3 CRUSHED SUB BASE**

Furnish material having both fine and coarse crushed stone or crushed gravel, and/or natural gravel, and when approved, blended with soil, sand, screenings or other materials.

Furnish crushed gravel or stone consisting of hard, durable particles, not containing excessive flat, elongated, soft or disintegrated rock, dirt, or other deleterious matter, and having a wear not exceeding 50 percent at 500 revolutions as determined by AASHTO T96 (Los Angeles Abrasion Test).

Use production methods that produce a percent of fractured rock in the finished product that is constant and uniform. Crush aggregate so that at least 25% of the material is retained on the No. 4 sieve and has one or more mechanically fractured faces.

**2.4 GRADATION**

Produce material, including any added binder or filler, meeting the following Table of Gradations as determined by AASHTO Methods T11 and T27:

## TABLE OF GRADATIONS

### PERCENTAGES BY WEIGHT PASSING SQUARE MESH SIEVES

Passing	4"Minus	3"Minus	2"Minus	1 1/2"Minus	1" Minus
4 Inch	100				
3 Inch	---	100			
2 Inch	---	---	100		
1 1/2 Inch	---	---	---	100	
1 Inch	---	---	---	---	100
No.4 Sieve	25-60	25-60	25-60	25-60	25-70
No. 200 Sieve	2-12	2-12	2-12	2-12	2-12

Up to 5% "oversized" material is permitted provided that the "oversized" material passes the screen size immediately larger than the top size specified. The material between the maximum screen opening and the No. 4 sieve shall be reasonably well graded.

Suitability of the aggregate is determined by the gradation testing of material placed in the project as required in the Contract documents, within the allowable limits described by the Table of Gradations for the particular grading specified.

Assure the liquid limit for the aggregate fraction passing a No. 40 sieve does not exceed 25, nor the plasticity index exceed 6, as determined by AASHTO T89 and T90.

## PART 3 EXECUTION

### 3.1 PREPARATION

Immediately before placing the base course, blade smooth and shape the underlying subgrade, sub-base or base course to the plan cross section before the base course is placed on the street. Do not place sub base course on wet or muddy subgrade or sub-base course. Maintain at least one completed area of finished and accepted subgrade or sub-base course in advance of placing base course.

### 3.2 PLACEMENT AND SPREADING

Mix and place the material in maximum 6-inch (15 cm) horizontal layers loose thickness. Deposit and spread each load of material on the prepared subgrade, or on a completed sub base or base course layer continuously without breaks. Assure hauling over the subgrade or over any completed sub base course does not damage the subgrade, sub base or base course. Spread using dump boards, spreader boxes, or moving vehicles equipped to distribute the material in a uniform layer or a windrow. Place and spread the material in a uniform layer to the specified depth without causing segregation. Once the base course is spread, blade-mix it the full depth by alternately blading the entire layer to the centerline and back to the roadway edge. For multiple layers, mix each layer as specified above. Blade smooth and compact each layer before placing the succeeding layer.

Uniformly add water to the material as necessary to aid in densification and to limit segregation.

Where crushed subbase is specified, produce a product with at least 25% of the material retained on the No. 4 sieve having one or more fractured faces.

Compact the material using appropriate tamping equipment or power rollers. Correct all irregularities or depressions that develop under rolling by scarifying the material and adding or removing material, as required, until the surface meets specifications.

Blade and compact alternately, as required to produce the specified surface until final inspection. Tamp the material along curbs, headers, manholes, and similar structures and all places inaccessible to rollers using approved mechanical tampers or hand tampers meet field density requirements.

### 3.3 FIELD DENSITY REQUIREMENTS

Furnish watering and rolling to obtain a minimum of 95 percent field density of the maximum dry density determined by AASTO T99. No separate compensation is allowed for rolling and watering the sub base course other than the sub base course bid item or items listed on the Contract documents.

### 3.4 SURFACE TOLERANCES

Finish the sub base course so that when tested using a 10-foot (3 m) straight edge placed on the surface with its center line parallel to the street center, the maximum surface deviation from the straight edge does not exceed 1/2-inch (12.7 mm). Additionally, the finished grade cannot deviate more than 0.1 foot (30.48 mm) at any point from the staked elevation and the sum of the deviations from two points not more than 30 feet (9.14 m) apart cannot exceed 0.1 feet (30.48 mm).

Perform all sub base course corrections to meet the above tolerances using approved methods and materials. Payment for patching aggregate is at the unit price bid for the sub base course material.

## PART 4 MEASUREMENT AND PAYMENT

### 4.1 CUBIC YARD BASIS: SUB BASE COURSE

This item is measured and paid for by the cubic yards (cubic meters) of uncrushed or crushed, sub base course of the specified gradations, complete in place, at the contract unit price bid for \_\_\_\_\_ "Minus Crushed or Uncrushed Sub base Course", which constitutes full compensation for furnishing, loading, hauling, spreading, blending, shaping, watering, and compacting the sub-base course material, and for all tools, labor and incidentals necessary to complete this item.

Payment is made under:

\_\_\_\_\_ "Minus Uncrushed Sub base Course - per cubic yard.(cubic meter)

\_\_\_\_\_ "Minus Crushed Sub Base Course - per cubic yard. (cubic meter)

### 4.3 SQUARE YARD BASIS: SUB BASE COURSE

This item is measured and paid for by the square yards (square meters) of asphalt pavement surface area for furnishing un-crushed, sub-base course of the thickness and gradations specified, complete in place, at the contract unit price bid for \_\_\_\_\_ "Thickness of \_\_\_\_\_" "Minus Crushed or Uncrushed Sub Base Course", which constitutes full compensation for furnishing, loading, hauling, spreading, shaping, blending, watering and compacting the sub-base course material, and for all tools, labor and incidentals necessary to complete this item.

Payment is made under:

\_\_\_\_ "Thickness of \_\_\_\_" Minus Un-crushed Sub-Base Course-per square yard.

\_\_\_\_ " Thickness of \_\_\_\_" Minus Crushed Sub-Base Course-per square yard

#### 4.3 LINEAR FOOT BASIS: SUB BASE COURSE

This item is measured and paid for by the linear feet of trench restored, measured along the trench centerline, with crushed or uncrushed, sub base course of the gradations specified, complete in place, at the contract unit price bid for \_\_\_\_"Minus Un-crushed Sub-Base Course", which constitutes full compensation for furnishing, loading, hauling, spreading, blending, shaping, watering, and compacting the sub-base course material, and for all tools, labor and incidentals necessary to complete this item.

Payment is made under:

\_\_\_\_" Minus Uncrushed Sub Base Course - per linear foot.

\_\_\_\_" Minus Crushed Sub Base Course - per linear foot.

## SECTION 02235

### CRUSHED BASE COURSE

#### 01. GENERAL:

##### 1.1 DESCRIPTION

This work is the placing of one or more base courses composed of crushed gravel, stone or other similar materials meeting the gradation and other quality criteria size specified herein.

#### 02. PRODUCTS:

##### 2.1 GENERAL

Furnish aggregate base material meeting the applicable aggregate quality requirements of Section 02232; AGGREGATES FOR SURFACING AND ASPHALT PLANT MIXES.

##### 2.2 CRUSHED BASE MATERIAL

Consists of both fine and coarse fragments of crushed stone or crushed gravel, and/or natural gravel, and when approved, blended with sand, finely crushed stone, crusher screenings or other similar materials.

Use crushed stone or gravel consisting of hard, durable particles of fragments of stone, free of excessive flat, elongated, soft or disintegrated pieces, dirt, or other deleterious matter, and having a percent of wear of not exceeding 45 percent at 500 revolutions when tested under AASHTO T96 (Los Angeles Abrasion Test).

Crush material so that the percentage of fractured particles in the finished product is as constant and uniform as practical. Crush to produce material where at least 35 percent of the material retained on the No. 4 sieve has at least one fractured face.

Incorporate material produced in the crushing operation and passing the No. 4 mesh sieve into the base material as necessary to meet the gradation requirements.

##### 2.3 GRADATION

As determined by AASHTO Methods T11 and T27, furnish material for the grading specified in the contract documents including binder or filler, which may have been added at the plant or at the site, meeting the requirements of that grading in the Table of Gradations below:

## TABLE OF GRADATIONS

### PERCENTAGES BY WEIGHT PASSING SQUARE MESH SIEVES

Passing	1 1/2" Minus	1" Minus	3/4" Minus
1 1/2 Inch	100		
1 Inch		100	
3/4 Inch	---	---	100
1/2 Inch	---	---	---
No. 4 Sieve	25 - 60	40 - 70	40 - 70
No. 10 Sieve	---	25 - 55	25 - 55
No. 200 Sieve	0 - 8	2 - 10	2 - 10

TABLE 02235.1

2.3.1 Up to 5% "oversized" material is permitted, provided that the "oversized" material passes the screen size immediately larger than the top size specified. The produced material between the maximum screen opening and retained on the No. 4 sieve shall be reasonably well graded.

2.3.2 Suitability of the aggregate gradation is based on samples obtained during placement in the project within the limits allowed in the table for the particular grading specified.

2.3.3 That portion of the fine aggregate passing the No. 200 sieve must be less than 60 percent of that portion passing the No. 40 sieve.

2.3.4 The liquid limit for that portion of the fine aggregate passing a No. 40 sieve cannot exceed 25, nor the plasticity index exceed 6, as determined by AASHTO T89 and T90.

## 03. EXECUTION:

### 3.1 PREPARATION

Before placing the base course, smooth and shape the surface of the underlying subgrade, sub base or base course to the cross section shown on the plans before placing the base course. Do not place base course on a wet or muddy subgrade or sub base course. Complete at least one area of finished and accepted subgrade, sub base or underlying base before the placing of any base course.

### 3.2 PLACEMENT AND SPREADING

Mix and place the material in maximum 8 inches (20.5 mm) compacted layers unless otherwise approved. Deposit and spread each load of material on the prepared subgrade, or on a completed sub base or base course layer, continuously without interruption. Discontinue operating haul units over subgrade, or over any sub base or base course completed if the haul units damage to the subgrade, sub base or base course. Deposit and spread the material in uniform layers, without segregation, to the loose depth that when compacted, and making allowance for any filler to be blended on the road, the layer has the specified thickness. Spread material using dump boards, spreader boxes, or vehicles equipped to distribute the material in uniform layer. The material may be deposited in windrows mixed and spread as described below. Construct each layer meeting these requirements. Blade smooth and thoroughly compact each layer as specified before placing the succeeding layer.

If segregation or moisture problems exist, or if the material was placed on the road in windrows, thoroughly blade-mix the material of the affected layer by alternately blading to the center and back to the edges of the street.

Add any water before and during the mixing operations (when required) in a manner limiting segregation of fine and coarse materials. Use a sprinkler or other water application device that provides a uniform water distribution without causing a washing effect of the base material.

### 3.3 FIELD DENSITY REQUIREMENTS

Compact placed material the full width by rolling with suitable tamping equipment or power rollers. Correct all irregularities or depressions that develop during rolling by loosening the material in these places and adding or removing material, as required.

Perform blading and compacting alternately as required or directed, to maintain a smooth, even, uniformly compacted surface until the final inspection. Along curbs, headers, manholes, and similar structures, and at all places not accessible to the roller, compact the base course material with suitable mechanical tampers or hand tampers to reach the compaction requirements.

Provide the watering and rolling required to obtain a minimum field density of 95 percent of maximum dry density as determined by AASHTO T99. No separate compensation is made for rolling and watering the base course other than the base course bid item or items listed on the contract documents.

### 3.4 SURFACE TOLERANCES

The base course surface, when finished and tested with a 10-foot (3.0 meter) straight edge placed on the surface with its center line parallel to the center line of the street, will not have a surface deviation exceeding 3/8-inch (1.0 centimeter). Additionally, the finished grade cannot deviate more than 0.05 feet (1.5 centimeters) at any point from the staked elevation, and further, the sum of the deviations from two points not more than 30 feet (9.0 meters) apart cannot exceed 0.05 feet (1.5 centimeters).

For base course receiving asphalt concrete surfacing, the finished grade cannot deviate more than 0.02 feet (0.6 centimeters) at any point from the staked elevations, and the sum of the deviations from two points not more than 30 feet (9.0 meters) apart cannot exceed 0.02 feet (0.6 centimeters).

If patching of the base course is necessary to meet the tolerances, perform patching using methods and aggregates approved by the Engineer. Payment for patching aggregate is at the unit price bid for the base course material.

## **PART 4 MEASUREMENT AND PAYMENT:**

### **4.1 CUBIC YARD BASIS: CRUSHED BASE COURSE.**

This item is measured and paid for by the cubic yards of crushed base course of the gradations specified in the Contract documents, complete in place, at the contract unit price bid for

\_\_\_\_ "Minus Crushed Base Course". Price and payment is full compensation for furnishing, crushing, loading, hauling, spreading, shaping, watering and compacting the base course material, and for all tools, labor and incidentals necessary to complete this item.

Payment is made under:

\_\_\_\_ "Minus Crushed Base Course - per cubic yard.

### **4.2 SQUARE YARD BASIS: CRUSHED BASE COURSE.**

This item is measured and paid for by the square yards of asphalt pavement surface area for furnishing crushed base course of the thickness and gradations specified in the Contract documents, complete in place, at the contract unit price bid for \_\_\_\_ "Thickness of \_\_\_\_" "Minus Crushed Base Course". Price and payment is full compensation for furnishing, crushing, loading, hauling, spreading, shaping, watering and compacting the base course material, and for all tools, labor and incidentals necessary to complete this item.

Payment is made under:

\_\_\_\_ "Thickness of \_\_\_\_" "Minus Crushed Base Course - per square yard.

### **4.3 LINEAR FOOT BASIS: CRUSHED BASE COURSE.**

This item is measured and paid for by the linear feet of trench re- stored, measured along the trench centerline, with crushed base course of the gradations specified in the Contract documents, completed in place, at the contract unit price bid for \_\_\_\_ "Minus Crushed Base Course". Price and payment is full compensation for furnishing, crushing, loading, hauling, spreading, shaping, blending, watering and compacting the base course material, and for all tools, labor and incidentals necessary to complete this item.

Payment is made under: \_\_\_\_ " Minus Crushed Base Course - per linear foot

TABLE 1  
PERFORMANCE GRADED ASPHALT BINDER (PGAB)

Performance Grade	PG 58		PG 64		Test Methods			
	- 22	- 28	- 22	- 28				
Average 7-day Maximum Pavement Design Temperature, ° C	< 58		< 64					
	> - 22	> - 28	> - 22	> - 28				
Original Binder								
Flash Point Temp.: Minimum ° C	230			AASHTO T48				
Viscosity: Maximum, 3 Ps·s (3000 cP), Test Temp, ° C	135			ASTM D4402				
Dynamic Shear: G*/sin delta, Minimum, 2.20 kPa Test Temp @ 10 rad/s, ° C	58	64		AASHTO TP5				
Rolling Thin Film Oven (AASHTO T 240) or Thin Film Oven (T 179)								
Mass Loss, Maximum, %	1.0			AASHTO T240				
Dynamic Shear: G*/sin delta, Minimum, 2.20 kPa Test Temp @ 10 rad/s, ° C	58	64		AASHTO TP5				
Pressure Aging Vessel Residue (AASHTO PP1)								
PAV Aging Temp, ° C	100		100		AASHTO PP1			
Dynamic Shear: G*·sin delta, Maximum, 5000 kPa Test Temp @ 10 rad/s, ° C	22	19	25	22	AASHTO TP5			
Creep Stiffness: S, Maximum, 300 Mpa m- Value, Minimum, 0.300 Test Temp, @ 60 sec, ° C	-12	-18	-12	-18	AASHTO TP1			

TABLE 2  
SPECIFICATIONS FOR RAPID CURING LIQUID ASPHALTS  
AASHTO M81

	RC-70 Min.	RC-70 Max.	RC-250 Min.	RC-250 Max.	RC-800 Min.	RC-800 Max.	RC-3000 Min.	RC-3000 Max.
Kinematic Viscosity at 60°C (140°F) (See note 1) centistokes	70	140	250	800	3000	6000		
Flash point (Tag open-cup), degrees °C (°F)	...	...	500	1600	27 (80)	27 (80)	...	...
Water, percent	...	0.2	27	27	0.2	0.2	0	0.2
			0.2	0.2	...	0.2		
<hr/>								
Distillation test Distillate, percentage by volume of total distillate to 360°C (680°F)								
to 190°C (374°F)	10	...	...	...	...	...	...	...
to 225°C (437°F)	50	...	35	15	...	...	...	...
to 260°C (500°F)	70	...	...	45	...	...	25	...
to 315°C (600°F)	85	...	60	75	...	...	70	...
			...	80	...	...		
<hr/>								
Residue from distillation to 360°C (680°F) volume percentage of sample by difference	55	...	65	75	...	80	...	
			...	...	...	...		
<hr/>								
Tests on residue from distillation: Penetration, 100g, 5 sec. at 25°C(77°F) Ductility, 5cm/min. At 25°C(77°F) cm Solubility in Trichloroethylene, percent	80	120	80	80	80	120		
	100	...	120	120	100	100	...	
	99	...	100	99	99	99	...	
			...	...	...	...		

Note 1: As an alternate, Saybolt-Furol viscosities may be specified as follows:

Grade RC-70 - Furol viscosity at 50°C (122°F) - 60 to 120 sec.

Grade RC-250 - Furol viscosity at 60°C (140°F) - 125 to 250 sec.

Grade RC-800 - Furol viscosity at 82.2°C (180°F) - 100 to 200 sec.

Grade RC-3000 - Furol viscosity at 82.2°C (180°F) - 300 to 600 sec.

TABLE 3  
SPECIFICATION FOR MEDIUM CURING LIQUID ASPHALT  
AASHTO M82

	MC-30		MC-70		MC-250		MC-800		MC-3000	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Kinematic Viscosity at 60°C (140°F) (See Note 1) centistokes	30	60	70	140	250	500	800	1600	3000	6000
Flash point (Tag open-cup), degrees oC (°F)	38 (100)	... (100)	38 ... (100)	... 0.2	66 (150)	... 0.2	66 (150)	... 0.2	66 (150)	...
Water, percent	...	...	...	...	...	...	...	...	...	0.2
Distillation test										
Distillate, percentage by volume of total distillate to 360°C (680°F) to 225°C (437°F) to 260°C (500°F) to 315°C (600°F)	25 40 75	0 70 93	20 60 65	0 60 90	0 1.5 60	10 5.5 87	0 0 45	... ... 80	... 0 80	... 0 15
Residue from distillation to 360°C (680°F) volume: percentage of sample difference	50	...	55	...	67	...	75	...	80	...
Tests on residue from distillation										
Penetration, 100g, 5 sec At 25°C (77°F)	120	250	120	250	120	250	120	250	120	250
Ductility, 5cm/min Cm (See Note 2)	100	...	100	...	100	...	100	...	100	...
Solubility in Trichloroethylene, percent	99	...	99	...	99	...	99	...	99	...

Spot Test: Heptane-xylene solvent, 35% xylene

Note 1: As an alternate, Saybolt Furol viscosities may be specified as follows:

Grade MC-70 - Furol viscosity at 50°C (122°F) 60 to 120 sec

Grade MC-30 - Furol viscosity at 25°C (77°F) 75 to 150 sec

Grade MC-250 - Furol viscosity at 60°C (140°F) - 125 to 250 sec

Grade MC-800 - Furol viscosity at 82.2°C (180°F) - 100 to 200 sec

Grade MC-3000 - Furol viscosity at 82.2°C (180°F) - 300 to 600 sec.

Note 2: If the ductility at 25°C (77°F) is less than 100, the material will be acceptable if its ductility at 15.5°C (60°F) is more than 100.

TABLE 4  
SPECIFICATION FOR SLOW CURING LIQUID ASPHALTS  
ASTM D2026

	SC-70		SC-250		SC-800		SC-3000	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Kinematic Viscosity at 60°C (140°F) (See Note 1) centistokes	70	140	250	500	800	1600	3000	6000
Flash point (Cleveland open cup), degrees (C) (0F)	66 (150)	... ...	70 (175)	... ...	93 (200)	... ...	107 (225)	...
Water, percent	...	0.5	...	0.5	...	0.5	...	0.5
Asphalt residue of 100 pen. percent by weight	50	...	60	...	70	...	80	...
Distillation test								
Total Distillate to 360°C (680°F) percent by volume	10	30	4	20	2	12	...	5
Test on residue from distillation								
Kinematic Viscosity at 60°C (140°F) Stokes Ductility of 100 pen. residue at 250°C (770°F), 5cm per min. cm	4	70	8	100	20	160	40	350
Solubility in Trichloroethylene, percent	100 99	... ...	100 99	... ...	100 99	... ...	100 99	...

Note 1.

As an alternate, Saybolt-Furol viscosities may be specified as follows.

Grade SC-70 - Furol viscosity at 50°C (122°F) - 60 to 120 sec

Grade SC-250 - Furol viscosity at 60°C (140°F) - 125 to 250 sec.

Grade SC-800 - Furol viscosity at 82.2°C (180°F) - 100 to 200 sec

Grade SC-3000 - Furol viscosity at 82.2°C (180°F) - 300 to 600 sec

TABLE 5  
SPECIFICATION FOR ANIONIC EMULSIFIED ASPHALT

TYPE GRADE	RAPID SETTING				MEDIUM SETTING				SLOW SETTING			
	RS-1	RS-2	MS-1	MS-2	MS-2h	SS-1	SS-1h	SS-2h	MS-2	MS-2h	SS-1	SS-1h
Tests on Emulsions												
Viscosity, Saybolt-Furol at 77°F (25°C)*	20	100	75	400	20	100	100	100	100	100	20	100
Viscosity, Saybolt-Furol at 122°F (50°C)*	...	...	60	...	...	...	...	...	...	...	...	...
Densibility*, 35ml, 0.02N CaCl <sub>2</sub> , percent	55	...	63	...	55	...	65	...	65	...	57	...
Residue by distillation, percent												
Tests on Residue from distillation tests												
Penetration, 77°F (25°C), 100g, 5 s	100	200	100	200	100	200	100	200	40	90	100	200
Ductility, 77°F (25°C), 5cm/min, cm	40	...	40	...	40	...	40	...	40	...	40	...
Solubility in trichlorethylene, percent	97.5	...	97.5	...	97.5	...	97.5	...	97.5	...	97.5	...
Suggested uses:	surface treatment penetration macadam and tack coat.	surface treatment and penetration macadam and tack coat.	plant or road mixture with coarse aggregate, substantially all of which is retained on a No. 8 (2.36mm) sieve and a portion of which may pass a No. 200 (0.075mm) sieve, slurry seal treatment	plant or road mixture with graded and fine aggregates, a substantial quantity of which passes a No. 8 (2.36mm) sieve and practically none of which passes a No. 200 (0.075mm) sieve, tack								

\* The densibility test shall be made within 30 days from date of shipment.

TABLE 6  
SPECIFICATION FOR CATIONIC EMULSIFIED ASPHALT  
AASHTO M208

### Suggested uses:

surface treatment, penetration macadam and tack coat.	surface treatment and penetration macadam	plant or road mixture with coarse aggregate, substantially all of which is retained on a No. 8 (2.36mm) sieve and practically none of which passes a No. 200 (0.075mm) sieve
	Penetration	plant or road mixture with graded and fine aggregates, a substantial quantity of which passes a No. 8 (2.36mm) sieve and a portion of which may pass a No. 200 (0.075mm) sieve
	macadam	Sieve, slurry seal treat

The demulsibility test shall be made within 30 days from date of shipment.

If the Particle Charge Test result is inconclusive, material having a maximum pH value of 6.7 will be acceptable.

## SECTION 02503

# HOT PLANT MIX ASPHALT CONCRETE BASE AND SURFACE COURSE

## NEW AND OVERLAY APPLICATIONS

### PART 1 GENERAL

#### 1.1 DESCRIPTION:

This work is the production and placing of plant mix asphalt pavements.

Hot plant mix asphalt concrete is mineral aggregate and asphalt material mixed at a central hot plant meeting these specifications and placed in one or more courses on a newly prepared or existing street roadway in accordance with the contract documents.

#### 1.2 REFERENCES:

AASHTO T11	AMOUNT OF MATERIAL FINER THAN NO. 200 SIEVE IN AGGREGATE
AASHTO T27	SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES
AASHTO T89	DETERMINING LIQUID LIMIT OF SOILS
AASHTO T90	DETERMINING THE PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS
AASHTO T165	EFFECT OF WATER ON COHESION OF COMPACTED BITUMINOUS MIXTURES
AASHTO T176	SAND EQUIVALENT VALUE OF SOILS AND FINE AGGREGATE
AASHTO T245	RESISTANCE TO PLASTIC FLOW OF BITUMINOUS MIXTURES USING MARSHALL APPARATUS
ASTM C1097	HYDRATED LIME FOR USE IN ASPHALTIC CONCRETE MIXTURES
ASTM D2726	BULK SPECIFIC GRAVITY AND DENSITY OF COMPACTED BITUMINOUS MIXTURES USING SATURATED SURFACE-DRY SPECIMENS
ASTM D3666 AND	EVALUATING AND QUALIFYING AGENCIES TESTING INSPECTING BITUMINOUS PAVING MATERIALS
MT 309	DETERMINING THE PERCENT OF ADHESION OF BITUMINOUS MATERIALS TO AGGREGATE

## PART 2 PRODUCTS

### 2.1 GENERAL

The "Hot Plant Mix Asphalt Concrete Base Course" may be a single bin mix. The "Hot Plant Mix Asphalt Concrete Surface Course" must have at least a 3-bin separation, when weight batching or continuous flow mixing types of plants are used. When a drum dryer is used, separate and stockpile the crushed aggregate into two sizes.

### 2.2 PLANT MIX AGGREGATES.

#### 2.2.1 General. Furnish plant mix aggregate meeting the applicable requirements of Section 02232; AGGREGATES FOR SURFACING AND ASPHALT PLANT MIXES.

Plant mix aggregate consists of coarse aggregate or gravel, crushed to the specified size, or crushed stone, composed of hard, durable pebbles or stone fragments, and a fine crushed stone filler, sand or other fine mineral material. The material retained on the No. 4 sieve is coarse aggregate, and that passing a No. 4 sieve is fine aggregate.

For all gradings, that fine aggregate, including any blended fine aggregate, passing a No. 40 sieve, must have a liquid limit not exceeding 25 and a plasticity index not exceeding 6 as determined by AASHTO T89 and T90.

Assure the composite aggregate is reasonably free from adherent films of clay or other matter that prevents thorough coating with asphalt material. Assure the aggregate will retain a thorough coating of the asphalt material to be used in the work when in contact with water. If the aggregate cannot meet this requirement, treat the aggregate or the asphalt material with an additive meeting the **Engineer's** approval that will insure asphalt film retention in the presence of water.

The fine aggregate or coarse aggregate, or a composite mixture, cannot show detrimental stripping when tested under Montana Test Method MT-309. If more than 5 percent stripping occurs, reject the aggregate or add an approved anti-strip agent to the asphalt at the refinery to reduce stripping below 5 percent. There is no additional compensation by the **owner** for the addition of anti-strip agent. Produce aggregate from a material source having a volume swell not exceeding 10 percent in 8 days and shows no cracking or disintegration when tested for volume swell and water absorption under Montana Test Method MT-305.

Produce coarse aggregate retained on the No.4 Sieve having a minimum of 50 percent by weight of particles with at least one mechanically fractured face. The coarse aggregate cannot show more than 40 percent wear at 500 revolutions when tested under AASHTO T96 (Los Angeles Abrasion Test).

#### 2.2.2 Special Requirements - Base Course Aggregates

The Special Provisions may specify a minimum sand equivalent of the aggregate (AASHTO T176). Assure the composite material meets the gradation requirements in Table 1 when tested under AASHTO T11 and AASHTO T27.

TABLE 1  
REQUIREMENTS FOR GRADING OF BASE COURSE AGGREGATE

PASSING	PERCENTAGE BY WEIGHT PASSING SQUARE MESH SIEVES
1-1/2" SIEVE .....	100
1" SIEVE .....	80 - 100
NO. 4 SIEVE .....	35 - 60
NO. 40 SIEVE .....	15 - 30
NO. 200 SIEVE .....	2 - 10

The above gradations represent the extreme limits which determine the suitability of aggregate for use. The final gradation must be uniformly graded from coarse to fine and not vary from the low limits on one screen to the high limits on the adjacent screen, or vice versa.

2.2.3 Special Requirements - Surface Course Aggregates. Furnish aggregate consisting of crushed stone or crushed gravel combined with other inert, finely divided mineral aggregate.

The Special Provisions may specify a minimum sand equivalent of the aggregate (AASHTO T176). The composite material must meet the gradation requirements in Table 2 when tested under AASHTO T11 and AASHTO T27.

TABLE 2  
REQUIREMENTS FOR GRADING OF SURFACE COURSE AGGREGATE

Percentage by Weight Passing Square-Mesh Sieves

Sieve Size	Type A	Type B	Type S-3	Type S-2	Type S-1	Job Mix Tolerance
1-inch	100	---	---	---	---	---
3/4-inch	90-98	100	100	---	---	±7
1/2-inch	75-90	80-100	95-100	100	---	±7
3/8-inch	60-80	70-90	75-90	90-100	100	±7
No. 4	40-55	45-65	50-70	50-72	50-72	±6
No. 1030-40	32-45	33-47	33-47	33-47	33-47	±6
No. 4015-28	15-25	15-30	15-27	15-27	15-27	±5
No. 200	3-8	4-10	4-10	4-10	4-10	±2

The above gradations represent the extreme limits which determine the suitability of aggregate for use. The final gradation must be uniformly graded from coarse to fine, and not vary from the low limits on one screen to the high limits on the adjacent screen, or vice versa.

The job mix formula establishes target values. During production the mix gradations must lie within the job mix tolerance specified in Table 2. The job mix tolerances apply if they do not exceed the extreme gradation limits in Table 2.

## 2.3 ASPHALT MATERIAL.

Furnish the asphalt material of the type and grade specified below and specified in the Contract documents and meeting the requirements of Section 02501; ASPHALT MATERIALS.

### Type and Grade

ASPHALT CEMENT, (PGAB) PG 58-22  
ASPHALT CEMENT, (PGAB) PG 58-28  
ASPHALT CEMENT, (PGAB) PG 64-22  
ASPHALT CEMENT, (PGAB) PG 64-28 (Polymer Modified)

The percentage of asphalt by weight, to be added to the aggregate will be, generally, between 4 and 8 percent of the weight of the dry aggregate. The mix design will establish the exact percentage of asphalt in the mix, based upon preliminary laboratory tests, sieve analysis and grading and character of the aggregate furnished within the specification limits. No claim is allowed for payment for rejecting any batch or load of mixture containing an excess or deficient amount of asphalt varying more than four-tenths (0.4) of one (1.0) percent from the exact percentages fixed.

## 2.4 HYDRATED LIME FOR ASPHALT CONCRETE.

Mineral filler may be incorporated in the asphalt concrete mixture. Furnish hydrated lime as filler when specified. Assure it is free of lumps and extraneous material and meets the following gradation requirements:

<u>Material Passing</u>	<u>Percent</u>
No. 30 Sieve	98-100
No. 80 Sieve	95-100
No. 200 Sieve	65-100

Assure the hydrated lime meets paragraph 2 (chemical composition) and paragraph 7 (a) requirements (chemical analysis) of ASTM C-6.

Where required, the mineral filler will be effectively mixed with the hot plant mix asphaltic concrete.

## 2.5 COMPOSITION OF MIXES:

### 2.5.1 GENERAL.

Submit to the **Engineer** for approval a mix design for each mix required on the project. Assure the job-mix formula is within the gradation limits in Section 02503.2.2.2 or Section 02503.2.2.3 and within the asphalt limits in Section 02503.2.3.

Have the job-mix formula prepared by an independent testing laboratory approved by the **Engineer**. The requirements of ASTM D-3666 are the guidelines for testing laboratory approval. The cost of the job-mix formulas is at **Contractor** expense.

The gradations are applicable for aggregate mixes in which the specific gravity of two or more size fractions does not differ by more than twenty points. If the specific gravity of two or more size fractions differs by more than twenty points, gradations will be adjusted to an equivalent percentage by volume.

Keep the job mix formula current and contain the following minimum information:

1. Gradation of all constituent aggregates.
2. Specific gravity of constituent aggregates and asphalt cement.
3. Source of supply of all materials and grade of A.C.
4. Marshall design curves for stability, unit weight, flow and volumetric requirements (VMA and total voids) at asphalt contents below and above optimum (four, minimum).
5. Measured voidless (Rice's) specific gravity used in voids computations.
6. Composite aggregate grading.
7. Recommended asphalt cement content.
8. Marshall compactive effort (50 blows).
9. Date of mix design (job mix formula).
10. Index of retained strength.

In addition to the job mix formula, all asphalt concrete surfacing mix submittals will have laboratory tests indicating that the index of retained strength of the proposed mix, as determined by AASHTO T-165, is at least 70% with a minimum dry strength of 200 psi (1380 kPa).

The maximum permissible variation from the job-mix formula is as follows:

Aggregate Gradation - - - Within Specification Limits

Asphalt - - - - -  $\pm$  0.4 percent

Temperature of Mix - - -  $\pm$  20° F.

## 2.5.2 ASPHALT CONCRETE BASE COURSE.

Prepare and construct a plant mix base course on a prepared subgrade. Assure the aggregate gradation is within the specification limits given in Section 02503.2.2.2.A(2) Table 1, or Section 02503.2.2.3 Table 2.

Produce Hot Plant Mix Asphalt Concrete Base Courses based upon mix designs having the following characteristics as measured by ASTM D-1556 control of Marshall Methods.

Number of compaction blows, each end of specimen .....	50
Stability, minimum .....	1000
Flow .....	8 - 16
Air voids, percent .....	3 - 8
Voids in mineral aggregate, minimum percent .....	14

The field density must be at least 97 percent of laboratory density.

In performing the above tests, if aggregate in excess of 1-inch size comprises more than 10 percent of the mineral aggregate, the tests may be performed using the following procedures:

1. Mix sample batch with asphalt and all aggregate, including the plus 1-inch portion.
2. Screen out the plus 1-inch size and run the established test upon the balance of the mixture.
3. Compute adjusted specific gravity, percent voids, and percent voids filled for the total mixture by use of the following formula:

$$\text{Adj. sp. gr.} = \frac{100}{A/C+B/D} (0.995)$$

Where:

A = Dry material in excess of 1-inch expressed as percent of total batch weight.

B = 100 percent -A.

C = Bulk sp. gr. of plus 1-inch material.

D = Actual sp. gr. of compacted test sample 0.995 - correction factor.

### 2.5.3 SPECIAL REQUIREMENTS - ASPHALT CONCRETE SURFACE COURSE.

The maximum permissible variation from the job-mix formula within the specification limits is as follows:

Aggregate Gradation . . . . . Within Specification Limits  
Asphalt . . . . .  $\pm 0.4$  percent\*  
Temperature of Mix . . . . .  $\pm 20^{\circ}\text{F}$ .

\*This tolerance will be permitted only if the job mix parameter curves indicated that the corresponding Marshall design limits are not exceeded.

Produce Hot Plant Mix Asphalt Concrete Surface courses based upon mix designs having the following characteristics as measured by AASHTO T245 "Resistance to Plastic Flow of Bituminous Mixtures by Means of the Marshall Apparatus":

Number of compaction blows, each end of specimen	50
Stability, minimum	1200
Flow	8 - 18
Air voids, percent	3 - 5
Voids in mineral aggregate, minimum percent	14

The field density must be at least 97 percent of laboratory density.

## PART 3 EXECUTION

### 3.1 GENERAL

Use mixing plants of either the weight batching type, the continuous flow mixing type, or drum dryer type. Use drum dryer mixers specifically designed and constructed for producing hot mix.

Equip all plants with approved conveyors, power units, aggregate handling equipment, aggregate screens and bins that are coordinated and operated to produce a uniform mixture within the specified job mix tolerances.

Use Batch-type plants having a minimum batch production capacity of 2,000 pounds (900 kg). Use Continuous flow or drum dryer plants having a minimum production capacity of 60 tons per hour (27 kg per hour).

These capacity requirements may be modified if specified in the Contract Documents.

Stop production and remove from the project mixing plants that fail to continuously produce a mixture meeting requirements as specified.

### 3.2 INSPECTION AND CONTROL OF ASPHALT MIXING PLANT

For verification of weights and measures, character of materials and determination of temperatures used in the preparation of the paving mixes, the **Engineer** or his authorized representative will, at all times, have access to all portions of the mixing plant, aggregate plant, storage yards and other facilities for producing and processing the materials for the work. All sampling and testing of processed and unprocessed material is performed in accordance with the provisions of the Contract documents.

### 3.3 MIX DESIGN

The **Owners** acceptance testing agency will make gradation analyses of the completed mix to assure that the materials being used and produced are within the tolerances of the mix design and the specifications of the mix being used.

### 3.4 SAMPLING AND TESTING FOR ACCEPTANCE

Sampling and testing of aggregates or other constituent materials will be performed by the **Owner's** testing agency at a frequency determined by the **owner** or the **owner's** representative. Marshall field control is performed under AASHTO T245. Field density testing is by core testing for acceptance purposes.

Samples will be used to verify compliance with the requirements set forth in Section 02503.2.5.

### 3.5 WEATHER LIMITATIONS

When the moisture in the stockpiled aggregate or the dryer adversely effects the quality of mix production, normal plant operations, or when pools of water are observed on the base, mixing and placing of hot-mix asphalt is prohibited.

Do not place asphalt hot-mix surface course mixture when the air temperature is less than 40°F (40°C) and rising. Do not place asphalt hot-mix base course mixtures of compacted lifts 4 inches (10 cm) or more when the air temperature is less than 30°F (-10°C) and rising. Do not place asphalt upon a surface which is frozen or that has a temperature of less than 32°F (0°C). Do not place paving during rainfall or in standing water.

### 3.6 SURFACE PREPARATION.

#### 3.6.1 GENERAL

Assure the area to be paved is true to line and grade and has a dry and properly prepared surface before starting paving operations. Assure the surface is free from all loose screenings and other loose or foreign material.

#### 3.6.2 NEW WORK

For new work, meet the surface preparation requirements in Sections 02230, 02234 or 02235 of these specifications. Prime prepared soil or aggregate bases meeting the requirements of Section 02502 if indicated as a bid item in the Contract documents.

Before paving, proof-roll the base with equipment having at least one 18 kip single axle load or equivalent. Excavate and replace areas that yield or crack under these wheel loads as directed. This does not replace or relax the base or subgrade compaction requirements.

Paint the surfaces of curbs and gutters, vertical faces of existing pavements and all structures in contact with asphalt mixes with a thin coating of asphaltic material to provide a water-tight joint.

#### 3.6.3 OVERLAYS OVER EXISTING PAVEMENTS AND OLD BASE

Where a base is rough or uneven, place a leveling course using a paver or motor grader and compact before the placing of subsequent courses.

When specified, place construction fabric to control reflective cracking as detailed meeting Section 02515 requirements.

When a leveling course is not specified, patch or correct all depressions and other irregularities, subject to the **Engineer's** approval, before starting other paving operations. Remove all rich and unsuitable patches, excess crack or joint filler, and all surplus bituminous from the area to be paved. Do not blot excessive deposits of asphalt with sand or stone.

Apply a tack coat when the surface to be paved is an existing portland cement concrete, brick or asphalt pavement. When a tack coat is required, use the asphalt material indicated, at the rate specified in Section 02502.

Coat the surfaces of curbs and gutters, vertical faces of existing pavements and all structures in actual contact with asphalt mixes with a thin, complete coating of asphalt material to provide a water-tight joint.

### 3.7 TRANSPORTATION OF MIX

Transport the mix in vehicles cleaned of all foreign material which may affect the mix. The truck beds must be painted, or sprayed with a lime-water, soap or detergent solution at least once a day or as often as required. After this operation elevate the truck bed and thoroughly drain it, with no excess solution being permitted. Dispatch the vehicles so that all material delivered is placed in daylight, unless the **Engineer** approves artificial light. Deliver material to the paver at a uniform rate and in an amount well within the capacity of the paving and compacting equipment.

### 3.8 SPREADING AND FINISHING

Spread and finish meeting the following requirements:

#### 3.8.1 GENERAL

The maximum lift thickness is 2 1/2 inches (6.5 cm) for surface courses and 5 inches (13 cm) for base courses.

#### 3.8.2 MECHANICAL PAVERS

Spread and strike off the base and surface courses with a mechanical paving machine. Operate the paving machine so that material does not accumulate and remain along the sides of the receiving hopper.

Do not use equipment which leaves tracks or indented areas which cannot be corrected in normal operation, produces flushing or other permanent blemishes, or fails to produce a satisfactory surface.

Construct longitudinal joints and edges to true line markings. Establish lines for the paver to follow in placing individual lanes parallel to the centerline of the proposed roadway. Position and operate the paver to follow closely the established lines.

When using pavers in echelon, assure the first paver follows the marks or lines with the second paver following the edge of the material placed by the first paver. To assure a hot joint and obtain proper compaction, assure the pavers work as close together as possible not exceeding 100 feet (30 m) apart. In backing trucks against the paver, take care not to jar the paver out of its proper alignment.

As soon as the first load of material has been spread, check the texture of the unrolled surface to determine its uniformity. Segregation of materials is not permitted. If segregation occurs, suspend spreading operation until the cause is determined and corrected.

Offset transverse joints in succeeding courses at least 2 feet (0.6 m). Offset longitudinal joints at least 6 inches (15 cm).

Correct all irregularities in alignment left by the paver by trimming directly behind the machine. Immediately after trimming, thoroughly compact the edges of the course by tamping. Avoid distorting the pavement during this operation.

Assure edges against which additional pavement is to be placed is straight and approximately vertical. Use a lute or covered rake immediately behind the paver, when required, to obtain a true line and vertical edge. Correct all irregularities in the surface of the pavement course directly behind the paver. Remove excess material forming high spots by a shovel or lute. Fill low areas with hot mix and smooth it with the back of a shovel being pulled over the surface. Fanning of material over such areas is not permitted.

### 3.8.3 MOTOR GRADER

When motor graders are used for the spreading of leveling courses, place the material on the roadbed so that the proper amount of material is available. Spread the mix to the required thickness, line and grade, with a uniform surface texture, while at a workable temperature.

### 3.8.4 HAND SPREADING

In small areas where the use of mechanical finishing equipment is not practical, the mix may be spread and finished by hand, if so directed by the **Engineer**. Wood or steel forms, approved by the **Engineer**, rigidly supported to assure correct grade and cross-section, may be used. In such instances, measuring blocks and intermediate strips must be used to obtain the required cross-section. Perform hand placing carefully. Uniformly distribute the material to avoid segregation of the coarse and fine aggregate. Broadcasting of material is not permitted. During the spreading operation, loosen and uniformly distribute all material using lutes or covered rakes. Reject material that has formed into lumps and does not break down readily. Following placing and before rolling, check the surface with templates and straightedges and correct all irregularities.

Maintain on the project heating equipment for keeping hand tools free from asphalt. Exercise caution to prevent heating that may burn the material. Assure the temperature of the tools when used is not greater than the temperature of the mix being placed. Use heat only to clean hand tools; petroleum oils or solvents are not permitted.

## 3.9 COMPACTION:

### 3.9.1 GENERAL

Furnish the number of rollers necessary to provide the specified pavement density.

During rolling, keep the roller wheels moist to avoid picking up the material.

After the longitudinal joints and edges have been compacted, start rolling longitudinally at the sides and progress toward the center of the pavement. For transverse graded streets, begin rolling on the low side and progress to the high side, overlapping passes by at least one-half the width of rollers and uniformlylapping each preceding pass. Operate the rollers at a slow, uniform speed with the drive roll or wheel nearest the paver. Do not exceed 3 miles per hours (4.8 km per hour).

Do not quickly change the line of rolling reversing direction suddenly. If rolling displaces the material, re-work the area using lutes or shovels and restore it the original grade of the loose material before rerolling. Do not permit heavy equipment or rollers to stand on the finished surface before it has been compacted and has thoroughly cooled.

When paving in single width, roll the first lane placed as follows:

- (a) Transverse joints
- (b) Outside edge
- (c) Initial or breakdown rolling, beginning on the low side and progressing toward the high side
- (d) Second rolling, same procedure as ②
- (e) Finish rolling

When paving in echelon, or abutting a previously placed lane, perform the longitudinal joint rolling the same as transverse joint rolling.

When paving in echelon, leave 2 or 3 inches (5 to 7.5 cm) of the edge which the second paver is following unrolled, rolling it when the joint between the lanes is rolled. Do not leave edges exposed more than 15 minutes without being rolled.

In laying a surface mix adjacent to any finished area, place it high enough so that, when compacted, the finished surface is true and uniform.

On slight grades, check gutters with a straightedge and test with running water to assure drainage to the planned outlet.

### 3.9.2 TRANSVERSE JOINTS

Construct and compact transverse joints to provide a smooth riding surface. Joints will be straight edged and string lined to assure smoothness and true alignment.

Joint formed with bulkheads to provide a straight line and vertical face will be checked with a straightedge before fresh material is placed against it to complete the joint. If bulkheads are not used to form the joint and the roller is permitted to roll over the edge of the new material, locate the joint line in back of the rounded edge the distance required to provide a true surface and cross-section. If a joint has been distorted by traffic or by other causes, trim it to line. Paint the joint face with a thin coating of asphalt before the fresh material is placed against it.

Place the material against the joints vertical face with the paving machine positioned so that the material overlaps the edge of the joint 1 to 2 inches (2.5 to 5 cm). Maintain a uniform depth of the overlapped material. Remove and dispose of the coarse aggregate in the overlapped material that dislodged during raking.

Position rollers on the previously compacted material transversely so that no more than 6 inches (15 cm) of the rolling wheel rides on the edge of the joint. Operate the roller to pinch and press the mix into place at the transverse joint. Continue rolling along this line, shifting position gradually across the joint, in 6-to 8-inch (15 to 20 cm) increments, until the joint has been rolled by entire width of the roller wheel.

Keep the number of transverse joints to a minimum. When paving single width and maintaining traffic, pave one lane no farther than one block. Complete all lanes to the same station at the end of each paving day. When paving in echelon, bring the lanes up even as is practical.

### 3.9.3 LONGITUDINAL JOINTS

Roll longitudinal joints directly behind the paving operation. Assure the first land placed is true to line and grade and has a vertical face. Place the material in the lane being paved up firmly against the face of the previously placed lane. Position the paver during spreading to assure the material overlaps the edge of the lane previously placed by 1 inch to 2 inches (25 to 50 mm). Uniformly maintain the width and depth of the overlapped material at all times. Keep the paver aligned with the line or markings placed along the joint for alignment purposes. Before rolling, remove and dispose of the coarse aggregate in the material overlapping the joint.

Shift rollers onto the previously placed lane so that not more than 6 inches (15 cm) of the roller wheel rides on the edge of the fine material left by brooming. Operate the rollers to compact the fines gradually across the joint. Continue rolling until a compacted, neat joint is obtained. When the abutting lane is not placed in the same day, paint the joint with a very thin coating of asphalt before placing the abutting lane. If the joint is distorted during the day's work by traffic or by other causes, carefully trim the edge of the lane to a neat line.

### 3.9.4 EDGES

Roll the pavement edges concurrently with or immediately after rolling the longitudinal joint.

Exercise care in consolidating the course along the entire length of the edges. In rolling pavement edges, extend the roller wheels 2 to 4 inches (5 to 10 cm) beyond the pavement edge.

### 3.9.5 BREAKDOWN ROLLING

Immediately begin breakdown rolling following the rolling of the longitudinal joint and edges. Operate rollers as close to the paver as required to obtain density without causing undue displacement. Operate the breakdown roller with the drive roll or wheel nearest the finishing machine. The **Engineer** may make exceptions may when working on steep slopes or super-elevated curves.

### 3.9.6 SECOND ROLLING

Assure the second rolling follows the breakdown rolling as close as possible while the paving mix is still at a temperature that will provide the specified density.

### 3.9.7 FINISH ROLLING

Perform the finish rolling while the material is still warm enough to remove roller marks. If necessary, the **Engineer** may require using pneumatic-tired rollers. Complete finish rolling the same day the mixture is placed.

In places inaccessible to standard rollers, perform compaction using trench rollers or others to meet the specified compaction requirements. Operate the trench roller as directed until the course is compacted. Hand, manual or mechanical tamping, may be used in such areas if it is proved to the **Engineer** that the operation will provide the specified density.

### 3.9.8 SHOULDER

Where paved shoulders or curbs are not specified, do not place the shoulder material against the pavement edges until the surface course rolling is completed. Take care to prevent distortion of the pavement edge from specified line and grade. When shoulders are paved (except in conjunction with the traveled way paving), cold joint construction procedure is required to assure a tight bond at the joint.

When the rolling of the surface course has been completed and the edges have been thoroughly compacted, immediately place shoulder material against the edges and roll it.

## 3.10 DENSITY AND SURFACE REQUIREMENTS

The completed base and surface courses must have a density equal to or exceeding 97 percent of Marshall specimens, prepared as specified in Section 02503.2.2 and made from plant mix meeting the job-mix formula.

Produce a final surface that is uniform in texture and meets the line and grade specified. Before final acceptance of the Project or during the progress of the work, the thickness of all courses will be determined by the **Engineer**. Repair or replace all unsatisfactory work.

Assure density and thickness meets the plans and specifications. During compaction, preliminary tests, to aid in controlling the thickness, may be performed by inserting a flat blade, correctly graduated, through the material to the top of the previously placed base, or by other approved methods.

In checking compacted depth, the cutting of the test holes, refilling with acceptable materials and proper compaction may be performed by the **Owner**'s testing agency.

For testing the surface on all courses, a 10-foot (3 m) straightedge will be used with the centerline of the straight-edge placed parallel to the roadway centerline.

Any variations that exceed 5/16-inch (0.8 cm) in 10 feet (3 m) for base course and 1/4-inch (0.64 cm) in 10 feet (3 m) for surface course must be corrected. Correct irregularities that may develop before the completion of rolling loosening the surface mix and removing or adding materials as is required. If any irregularities or defects remain after the final compaction, remove the surface course and place and compact new material to a true and even surface. All minor surface projections, joints and minor honeycombed surfaces must be rolled smooth to grade, as directed.

Remove and replace areas of new pavement requiring patching as directed. Patching material will be tested for meeting specifications. The cost of testing is at **Contractor** expense.

### 3.10.1 MINIMUM STANDARDS FOR PATCHING NEW OR EXISTING PAVEMENT SHALL INCLUDE THE FOLLOWING:

- 3.10.1.1 Cut all asphalt edges with a jackhammer spade or equal before patching.
- 3.10.1.2 Form asphalt edges in a regular patch shape as close to a rectangle as practicable.
- 3.10.1.3 Cut asphalt edges at least 12 inches (30 cm) wider than the trench width on each side of trench excavations. Cuts should be parallel to the street centerline for mainline construction and perpendicular to the street centerline for service lateral construction.
- 3.10.1.4 Remove and replace asphalt surface widths of less than 3 feet (90 cm).

### 3.11 PAVEMENT AND MATERIAL TESTING REQUIREMENTS

**Owner's** testing agency will provide core samples of asphalt surface courses to check in place density and compacted depth. The cores are 4-inch (10 cm) diameter.

Materials and acceptance tests will be made by the **owner's** testing agency to determine the **Contractor's** compliance with the specifications.

Should materials fail to meet the tests specified, pay the costs of any required re-testing for acceptance purposes. Re-testing will be performed by the **Owner's** testing agency unless otherwise approved by the **owner**. The costs of retesting will be deducted from the **Contractor's** progress estimate.

The costs of the following tests are at **Contractor** expense:

- (1) Initial aggregate quality tests
- (2) Provide Job-Mix Formula
- (3) Any tests the Contractor requires to control his crushing, screening or other construction operations
- (4) Retesting of failing tests as provided above

Correct all pavement composition, field density, or thickness, deficiencies at **Contractor** expense.

The field density and thickness of the pavement is determined by measuring the cores tested. The actual thickness must be within 1/4-inch (6.5 mm) of the specified thickness.

When the measurement of any core is less than the plan thickness by more than the allowable deviation, the actual thickness of the pavement in this area may be determined by taking additional cores at intervals parallel to the center-line in each direction from the affected location until, in each direction, a core is found which is not deficient by more than the allowable deviation. Areas found deficient in thickness by more than the allowable deviation will be evaluated by the **Engineer**. If the **Engineer** determines the deficient areas warrant removal, remove and replace the areas with asphaltic concrete of the thickness shown on the plans. Additional coring is considered as re-testing of failing areas.

## PART 4 MEASUREMENT AND PAYMENT

### 4.1 TONNAGE BASIS

#### 4.1.1 HOT PLANT MIX ASPHALT CONCRETE BASE AND SURFACE COURSES.

These items are measured by the ton of 2,000 pounds (900 kg) of asphalt paving mixture, including the weight of the asphalt. The quantities measured for payment are the amount of asphalt paving materials actually used in the completed and accepted work in accordance with the plans and specifications.

"Hot Plant Mix Asphalt Concrete Base or Surface Course" is paid for at the unit price bid per ton of 2,000 pounds (900 kg). Price and payment is full compensation for cleaning base or underlying course; for producing, furnishing, transporting, stockpiling, heating, drying and screening of aggregate materials; for furnishing, handling, measuring, mixing, manipulating and placing of materials; for hauling, placing, shaping, compacting and finishing of the paving mix; for improving unsatisfactory areas; for furnishing samples; for furnishing, testing and sealing of scales; for furnishing the weigh house and field laboratory; for all materials (exclusive of asphalt), manipulation, labor, tools, equipment and incidentals necessary to complete the work in full compliance with the plans and specifications.

Payment is made under:

Hot Plant Mix Asphalt Concrete Base Course - per ton (metric ton)  
Hot Plant Mix Asphalt Concrete Surface Course Grade " \_\_\_\_ " - per ton

#### 4.1.2 ASPHALT CEMENT.

This item is measured by the ton of 2,000 pounds (900 kg). The tonnage to be paid for is the number of tons of the asphalt cement materials used as ordered in the accepted work. Tonnage used in the paving mixture is computed from the truck weigh tickets by using the percentage of asphalt in the approved mix (and verified by extracted gradation tests). "Pen Asphalt Cement", measured as provided above, will be paid for at the unit prices bid per ton. Price and payment is full compensation for furnishing, handling, storing, heating, transporting and placing in the mixture; for all samples and for all labor, tools, equipment and incidentals necessary to complete the work in full compliance with the plans and specifications.

Payment is made under:

PG 58-22 ASPHALT CEMENT - per ton (metric ton).  
PG 58-28 ASPHALT CEMENT - per ton (metric ton).  
PG 64-22 ASPHALT CEMENT - per ton (metric ton).  
PG 64-28 ASPHALT CEMENT - per ton (metric ton)

#### 4.1.3 HYDRATED LIME

This item is measured by the ton of 2,000 pounds (900 kg) for the amount of hydrated lime actually used in the completed and accepted work.

The quantities of "Mineral Filler", measured as provided above, is paid for at the unit price bid per ton (metric ton). Price and payment is full compensation for furnishing, storing, handling, and other charges, all tools, equipment, labor and performance of all work necessary to mix the material with the Asphalt Concrete and all other incidentals necessary to complete this item.

Payment is made under:

Mineral Filler - per ton.

#### 4.2 SQUARE YARD BASIS:

##### 4.2.1 HOT PLANT MIX ASPHALT CONCRETE BASE AND SURFACE COURSES.

These items are measured by the square yard of asphalt pavement surface area. The quantities measured for payment are the square yards (square meters) of specified thickness of asphalt paving in the completed and accepted work as measured in the field.

"\_\_\_\_" "Thickness of Hot Plant Mix Asphalt Concrete Base Surface Course Grade" \_\_\_\_", is paid for at the unit price bid per square yard. Price and payment is full compensation for cleaning base or underlying course; for producing, furnishing, transporting, stockpiling, heating, drying and screening of aggregate materials; for furnishing, handling, measuring, mixing, manipulating and placing of materials; for hauling, placing, shaping, compacting and finishing of the paving mix; for improving unsatisfactory areas; for furnishing samples; for all materials (exclusive of asphalt and mineral filler), manipulation, labor, tools, equipment and incidentals necessary to complete the work in full compliance with the plans and specifications.

Payment is made under:

"\_\_\_\_" "Thickness of Hot Plant Mix Asphalt Concrete Base Course Grade  
"\_\_\_\_" - per square yard (square meter).

"\_\_\_\_" "Thickness of Hot Plant Mix Asphalt Concrete Surface Course Grade  
"\_\_\_\_" - per square yard (square meter).

#### 4.2.2 ASPHALT CEMENT.

This item is measured by the ton of 2,000 pounds(900 kg). The tonnage to be paid for is the number of tons (metric tons) of the asphalt cement materials used as ordered in the accepted work. Tonnage used in the paving mixture is computed on the basis of an average of the percentages of the asphaltic cement taken from field extracted gradation tests, whichever is less. The weight of one square yard of A.C. plant mix is determined by averaging field density tests or using 97 percent of laboratory job-mix formula density, whichever is less.

"Pen Asphalt Cement", measured as provided above, is paid for at the unit prices bid per ton (metric ton). Price and payment is full compensation for furnishing, handling, storing, heating, transporting and placing in the mixture; for all samples and for all labor, tools, equipment and incidentals necessary to complete the work in full compliance with the plans and specifications.

Payment is made under:

PG 58-22 ASPHALT CEMENT - per ton (metric ton).  
PG 58-28 ASPHALT CEMENT - per ton (metric ton).  
PG 64-22 ASPHALT CEMENT - per ton (metric ton).  
PG 64-28 ASPHALT CEMENT - per ton (metric ton).

#### 4.2.3 HYDRATED LIME

This item is measured by the ton of 2,000 pounds (900 kg) for the amount of hydrated lime actually used in the completed and accepted work.

The quantities of "Hydrated Lime", measured as provided above, is paid for at the unit price bid per ton (metric ton). Price and payment is full compensation for furnishing, storing, handling and other charges, all tools, equipment, labor and performance of all work necessary to mix the material with the Asphalt Concrete and all other incidentals necessary to complete this item.

Payment is made under:

Hydrated Lime - per ton (metric ton).

### 4.3 LINEAR FOOT BASIS

#### 4.3.1 HOT PLANT MIX ASPHALT CONCRETE BASE AND SURFACE COURSES.

These items are measured by the linear foot of asphalt pavement trench restoration. The quantities measured for payment are the linear feet of specified thickness of asphalt paving in the completed and accepted work as measured in the field along the trench centerline.

"      "Thickness of Hot Plant Mix Asphalt Concrete Base or Surface Course Grade"      ", is paid for at the unit price bid per linear foot. Price and payment is full compensation for cleaning base or underlying course; for producing, furnishing, transporting, stockpiling, handling, measuring, mixing, manipulating and placing of materials; for hauling, placing, shaping, compacting and finishing of the paving mix; for improving unsatisfactory areas; for furnishing samples; for all materials, manipulation, labor, tools, equipment and incidentals necessary to complete the work in full compliance with the plans and specifications.

Payment is made under:

Hot Plant Mix Asphalt Concrete Base Course - per linear foot.  
Hot Plant Mix Asphalt Concrete Surface Course Grade"      " - per linear foot.

#### 4.3.2 ASPHALT CEMENT

No separate measurement and payment is made for this item. The cost for this item is to be included in the cost for Hot Plant Mix Asphalt Concrete Base and Surface Courses.

#### 4.3.3 HYDRATED LIME

No separate measurement and payment is made for this item. The cost for this item is to be included in the cost for Hot Plant Mix Asphalt Concrete Base and Surface Courses.

## **SECTION 02504 ASPHALT SEAL COAT**

### **PART 1 GENERAL**

#### **1.1 DESCRIPTION**

This work is applying a single application of asphalt material on a prepared asphalt surface, followed by spreading seal coat aggregate meeting these specifications.

#### **1.2 REFERENCES**

AASHTO T11	AMOUNT OF MATERIAL FINER THAN NO. 200 SIEVE IN AGGREGATE
AASHTO T27	SIEVE ANALYSIS OF COARSE AND FINE AGGREGATES
AASHTO T89	DETERMINING THE LIQUID LIMIT OF SOILS
AASHTO T90	DETERMINING THE PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS
AASHTO T96	RESISTANCE TO DEGRADATION OF AGGREGATE BY ABRASION AND IMPACT IN THE LOS ANGELES MACHINE
MT 309	DETERMINING THE PERCENT OF ADHESION OF BITUMINOUS MATERIALS TO AGGREGATE

### **PART 2 PRODUCTS**

#### **2.1 ASPHALT**

Furnish asphalt material meeting the specifications in Section 02501; ASPHALT MATERIALS and the contract requirements.

#### **2.2 AGGREGATE**

Furnish seal coat aggregate meeting the applicable requirements of Section 02232; AGGREGATES FOR SURFACING AND ASPHALT PLANT MIXES.

Furnish material consisting of crushed stone or crushed aggregate that is clean, durable fragments free from an excess of flat, elongated, soft or disintegrated pieces, clay balls or other deleterious material. Assure the material produced is free from adherent films of clay or rock dust and is washed thoroughly. No combination of shale, clay, coal, or soft particles can exceed 1.5%. Assure the aggregate has a minimum cleanliness value of 75 when tested under Montana Test Method MT228.

The material cannot exceed a wear of 40 percent at 500 revolutions when tested under AASHTO Method T96 (Los Angeles Abrasion Test). The abrasion test is run using a 5,000 gram sample of material between the 3/8-inch and No. 4 sieves and an abrasive charge of 8 balls. A minimum of 70% by weight of the coarse aggregate (retained on No.4 Sieve) must have at least one fractured face.

The aggregate, or a composite mixture, must show no detrimental stripping when tested under Montana Test Methods MT-309. If stripping exceeds 5 percent , the aggregate will be rejected or an alternate grade of asphalt substituted to reduce stripping below 5 percent.

For all gradings, that portion of the aggregate passing a No. 40 sieve must be non-plastic as determined by AASHTO T89 and T90.

When tested by AASHTO Methods T11 and T27 in conjunction with water wash, chips must meet the grading requirements of the following tables :

Table I

1/2" SEAL COAT AGGREGATE - TABLE OF GRADATION

<u>Sieve Designation</u>	<u>Percentage of Weight Passing Sieves</u>
5/8-inch Sieve	100
3/8-inch Sieve	35 - 55
No. 4 Sieve	0 - 15
No. 8 Sieve	0 - 5
No.200 Sieve	0 - 2

Table II

3/8" SEAL COAT AGGREGATE - TABLE OF GRADATION

<u>Sieve Designation</u>	<u>Percentage of Weight Passing Sieves</u>
1/2-inch Sieve	100
3/8-inch Sieve	85 - 100
No. 4 Sieve	10 - 30
No. 10 Sieve	0 - 10
No. 40 Sieve	0 - 2

Table III  
1/4" SEAL COAT AGGREGATE - TABLE OF GRADATION

<u>Sieve Designation</u>	<u>Percentage of Weight Passing Sieves</u>
3/8-inch Sieve	100
1/4-inch Sieve	85 - 100
No. 8 Sieve	0 - 25
No. 16 Sieve	0 - 10
No. 40 Sieve	0 - 2

TABLE IV  
SAND SEAL COAT AGGREGATE - TABLE OF GRADATION

<u>Sieve Designation</u>	<u>Percentage of Weight Passing Sieves</u>
1/4-inch Sieve	100
No. 8 Sieve	10 - 40
No. 16 Sieve	0 - 10

## PART 3 EXECUTION

### 3.1 EQUIPMENT

#### 3.1.1 DISTRIBUTORS

Furnish distributors meeting the requirements of Section 02502; ASPHALT PRIME AND/OR TACK COAT.

#### 3.1.2 BROOMS.

Provide power brooms, or a power blower or both.

#### 3.1.3 AGGREGATE SPREADER

Furnish an independent, self-propelled aggregate spreading equipment (Flaherty Spreadmaster or equal) that can be adjusted to spread the specified quantity of cover aggregate per square yard (square meter).

#### 3.1.4 ROLLERS

Furnish pneumatic-tired rollers of standard manufacture capable of reversing direction without backlash and with positive, accurate steering control.

## 3.2 CONSTRUCTION METHODS:

### 3.2.1 SEASONAL LIMITATIONS

Seal coating operations cannot be performed after September 1 for areas higher than 3,500 feet (1,070 meters) above sea level. For areas below 3,500 feet (1,070 meters) above sea level, seal coating operations are not permitted after September 15.

### 3.2.2 WEATHER LIMITATIONS

Do not apply asphalt material when the street face is damp or wet, or when the atmospheric temperature in the shade is less than 65° F.(18° C). Do not start work without the **Engineer's** approval and terminate work at once in event of rain. Terminate seal coating work just before dark, and stop work during wind that blows sand, dust or other foreign matter into the spread asphalt material before the aggregate is applied.

### 3.2.3 PREPARATION OF SURFACE.

#### 3.2.3.1 General

Do not start coat operations until, the Engineer determines the asphalt surface course to be seal coated is thoroughly compacted and rolling and all holes and breaks in the surface and edges are repaired. In no event, unless ordered in writing by the **Engineer**, is the seal coat to be placed on newly constructed or reconditioned surfaces within 7 days of the surface having been placed.

#### 3.2.3.2 Cleaning

Immediately before applying the asphalt material, clean the surface of all dust, dirt, sand or other objectionable material that prevents complete coverage or bond between the asphalt material and the street surface, using a rotary power broom or blower, by hand sweeping, or both, as required. Thoroughly clean the outer edges adjacent to vertical curbs. Do not mix material removed from the surface with the cover aggregate.

### 3.2.4 APPLICATION OF ASPHALT MATERIAL

Application rates will range between 0.20 to 0.35 gal. per sq.yard (0.9 liters to 1.59 liters per sq. meter) for 3/8" and 1/4" (9.5 mm and 6.35 mm) seal coat aggregate or 0.15 to 0.25 gal. per sq. Yard (0.68 liters to 1.13 liters per sq. meter) for sand seal aggregate, depending upon aggregate gradation and asphalt material specified. Apply the asphalt material uniformly at the rate specified.

The **Engineer** may require adjustments in the application during the work. When heating is required, take precautions to avoid fire hazard. Thoroughly clean the distributor before use unless its last use was with the same type of asphaltic material specified for the work.

Before application, spread building paper over the surface, from the joint back, for the distance required for the spraybar to begin spraying and operating at full force when it reaches the surface to be treated. After the asphalt is applied, remove and dispose of the building paper.

Shut off the spraybar instantly at each construction joint to assure a straight line and the full application of asphaltic binder up to the joint. If required to prevent dripping, insert a drip pan under the nozzles when the application is stopped.

Use a hand sprayer to apply asphaltic binder to touch up all spots missed by the distributor.

Before and during seal coating operations, calibrate or check the adjustments on the distributor as follows:

- (1) Tank calibration
- (2) Nozzle adjustment and pressure
- (3) Spraybar height
- (4) Bitometer calibration
- (5) Transverse and Longitudinal Spread of Asphalt Material. (Transverse spread variation shall not exceed 15 percent and longitudinal spread variation shall not exceed 10 percent plus or minus of the rate specified.)

### 3.2.5 APPLICATION OF SEAL COAT AGGREGATE

This rate will range between 20 to 30 pounds per square yard (10 to 16 kg/sq. meter) for 3/8"(9.5 mm) aggregate, 15 to 25 pounds per square yard (8 to 13.5 kg per square meter) for 1/4" (0.65mm) aggregate, or 10 to 15 pounds per square yard (5.5 to 8 kg per square meter) for sand seal coat aggregate, depending on aggregate gradation. During the course of the work, adjustments will be made in the rate of application when required.

Assure the cover coat material is stockpiled enough in advance of the work so that excess water has drained from the aggregate. Do not spread seal coat aggregate if the moisture content of the aggregate exceeds 2 percent.

Uniformly distribute the cover coat at the specified rate using a mechanical or a self-propelled spreader immediately after the asphaltic material application. If weather or surface conditions make require, restrict the application of asphalt material to the area coverable by the cover coat material available in the trucks. Assure cover aggregate is available at all times to assure continuous seal coating operations. Do not apply seal coat aggregate to cold, dried or partially dried asphalt material.

Immediately after spreading, roll the aggregate with self-propelled, pneumatic-tired rollers. Roll in a longitudinal direction, beginning at the outer edges of the treatment and working toward the center. Overlap the previous strip by about one-half the roller width. Complete the first rolling of the aggregate within one-half hour of it being spread. Continue rolling until a smooth, thoroughly compacted surface is obtained. Roll at least of three complete passes with each roller. If the seal coat is finished in partial widths at a time, leave 4 to 6 inches (100 to 150 mm) of the inside edge uncovered with aggregate to permit overlap of asphaltic material when the remaining portion of the surface is treated.

Remove all loose aggregate from the pavement after the work is completed, and dispose of at the specified location. If a location is not designated the chips become the **Contractors** property .

### 3.3 PROTECTION OF STREET SIDE STRUCTURES AND TRAFFIC CONTROL:

Protect all sign posts, street lamp posts, trees, shrubs and tops of curbs and gutters from splashing asphaltic material. Compensation for furnishing, erecting and removing such protection is included in the unit price bid for the application of asphalt material.

Keep traffic off of freshly sprayed asphalt.

## PART 4 MEASUREMENT AND PAYMENT

### 4.1 TONNAGE BASIS - SEAL COAT AGGREGATE

This item is measured and paid for by the ton of 2,000 pounds(900 kg) for the gradation(s) in the Contract document at the contract unit price bid for "Seal Coat Aggregate \_\_\_\_\_" Gradation". Price and payment is full compensation for the furnishing, delivering, and placing of the material; for brooming, compacting and rolling; for cleaning the existing surface; for covering excess asphaltic material; for removal of the excess aggregate cleaning gutters, and for all labor, equipment, tools, traffic control and incidentals necessary to complete this item.

Payment is made under:

Seal Coat Aggregate - 1/2" Gradation - per ton. (metric ton)  
Seal Coat Aggregate - 3/8" Gradation - per ton.(metric ton)  
Seal Coat Aggregate - 1/4" Gradation - per ton.(metric ton)  
Seal Coat Aggregate - Sand Gradation - per ton.(metric ton)

### 4.2 TONNAGE BASIS - EMULSIFIED ASPHALT

This item is measured and paid for by the ton of 2,000 pounds (900 kg) at the contract unit price bid for "CRS-2 Emulsified Asphalt". Price and payment is full compensation for all demurrage, storage, handling, and other charges, materials (including the asphalt), tools, equipment, labor and performance of all work necessary or incidental to the furnishing, delivering, unloading, heating, hauling and spreading of the asphalt material specified.

Payment is made only for the asphalt required and actually used in the work. The **Owner** accepts no responsibility for any oil shipped onto the project exceeding that required due to tank-truck or tank-car capacities or for other reasons.

Payment is made under:

CRS-2 Emulsified Asphalt - per ton.(metric ton)  
CRS-2lm Emulsified Asphalt - per ton.(metric ton)

#### 4.3      SQUARE YARD BASIS - ASPHALT SEAL AND CHIP COAT

This item is measured and paid for by the square yards of asphalt pavement surface area at the contract unit price bid for "CRS-2 Asphalt Seal and Chip Coat, \_\_\_\_" Gradation". Price and payment is full compensation for the furnishing, delivering, and placing of the aggregate material; for brooming, compacting and rolling; for cleaning the existing surface; for covering excess asphaltic material; and for removal of the excess aggregate and cleaning gutters. The price and payment is full compensation for all demurrage, storage, handling, and other charges, materials (including the asphalt), tools, equipment, labor and performance of all work necessary or incidental to the furnishing, delivering, unloading, heating, hauling and spreading of the asphalt material specified, and for all labor, equipment, tools, traffic control and incidentals necessary to complete this item.

CRS-2 Asphalt Seal and Chip coat, 1/2" Gradation - per square yard.(square meter)

CRS-2 Asphalt Seal and Chip coat, 3/8" Gradation - per square yard.(square meter)

CRS-2 Asphalt Seal and Chip coat, 1/4" Gradation - per square yard.(square meter)

CRS-2 Asphalt Seal and Chip coat, Sand Gradation - per square yard.(square meter)

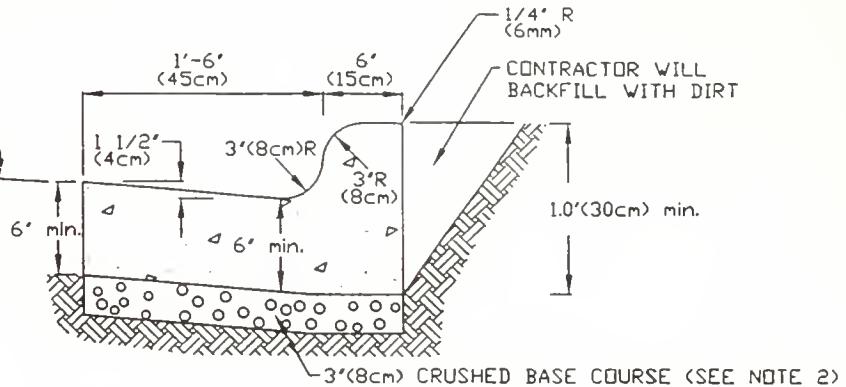


**Changes to  
Standard Drawings**

**Addendum No. 2**

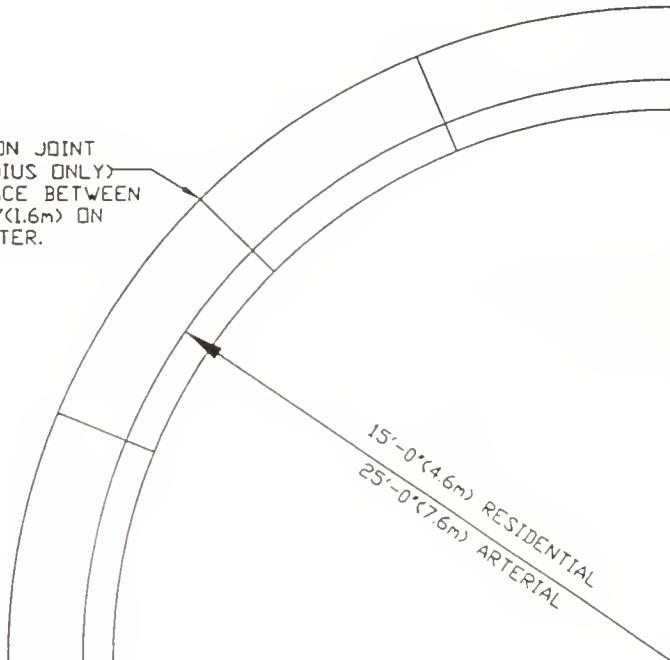


FINISHED STREET SURFACE  
TO BE  $1/8''$ (3mm) TO  $1/4''$ (6mm)  
ABOVE GUTTER LIP.



STANDARD SECTION

CONSTRUCTION JOINT  
(WITHIN RADIUS ONLY)  
MINIMUM SPACE BETWEEN  
JOINTS-5.25'(1.6m) ON  
CURB & GUTTER.

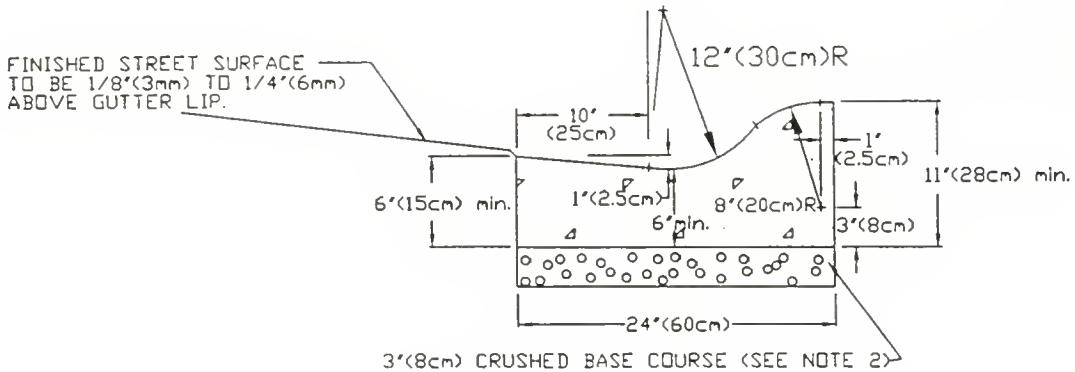


STANDARD ROUNDING  
AT STREET CORNERS

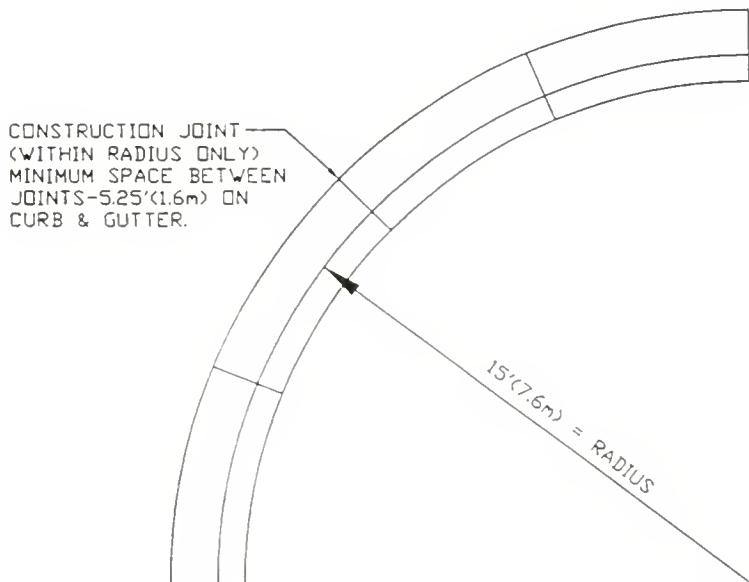
NOTES:

1. EXCAVATION REQUIRED FOR CURB AND GUTTER SHALL BE MEASURED AND PAID FOR AS 'STREET EXCAVATION' UNDER SECTION 02230 OF THE SPECIFICATIONS.
2. FOR NEW STREET CONSTRUCTION, EXTEND CRUSHED BASE COURSE TO THE BACK OF THE CURB. MINIMUM THICKNESS OF CRUSHED BASE COURSE BENEATH CURB AND GUTTER SHALL BE 3''(8cm). FOR CURB AND GUTTER REPLACEMENT PROJECTS, PROVIDE A MINIMUM OF 3''(8cm) OF CRUSHED BASE COURSE BENEATH NEW CURB AND GUTTER.

REVISED: 2/10/2000



STANDARD SECTION

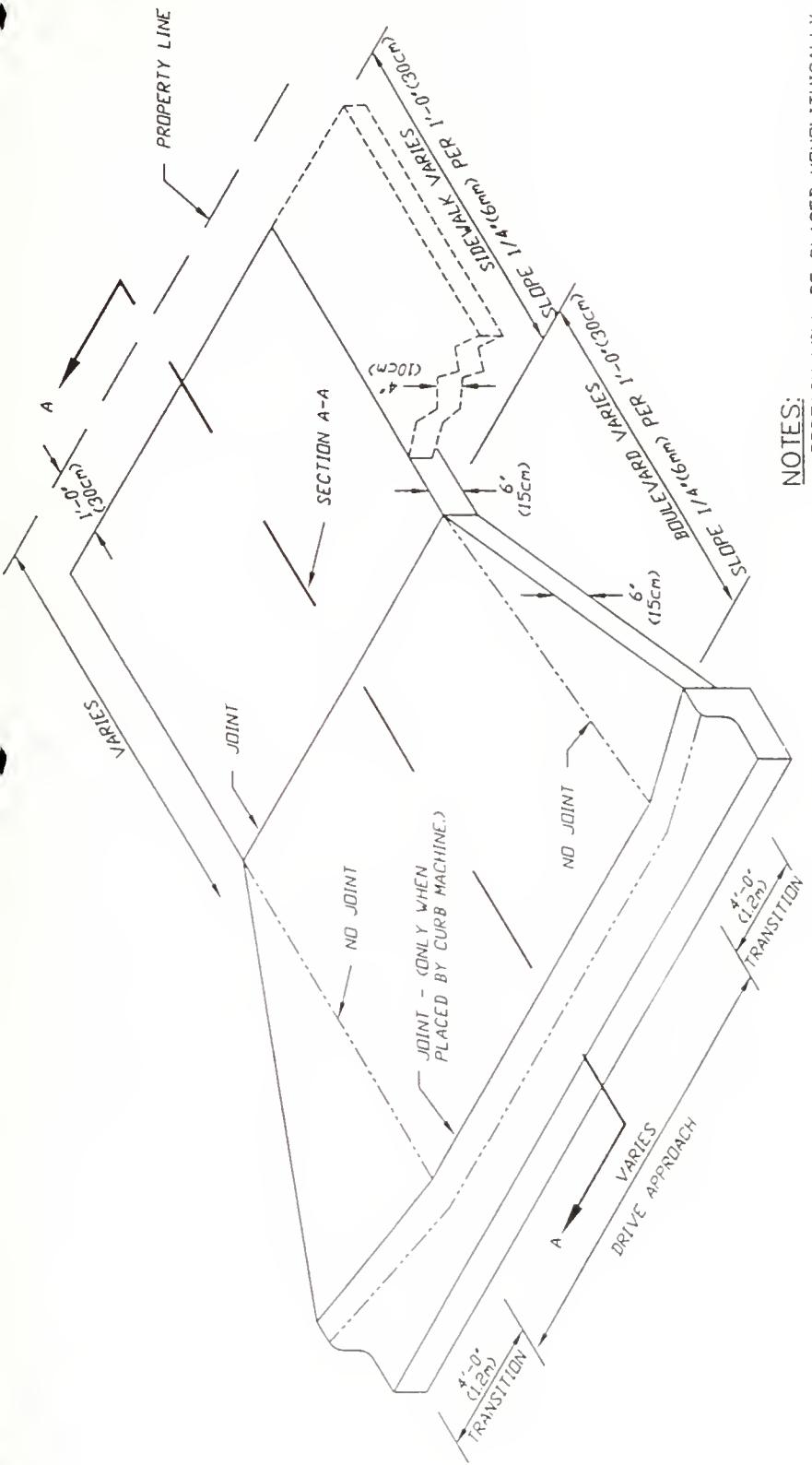


STANDARD ROUNDING  
AT STREET CORNERS

NOTES:

1. EXCAVATION REQUIRED FOR CURB AND GUTTER SHALL BE MEASURED AND PAID FOR AS 'STREET EXCAVATION' UNDER SECTION 02230 OF THE SPECIFICATIONS.
2. FOR NEW STREET CONSTRUCTION, EXTEND CRUSHED BASE COURSE TO THE BACK OF THE CURB. MINIMUM THICKNESS OF CRUSHED BASE COURSE BENEATH CURB AND GUTTER SHALL BE 3"(8cm). FOR CURB AND GUTTER REPLACEMENT PROJECTS, PROVIDE A MINIMUM OF 3"(8cm) OF CRUSHED BASE COURSE BENEATH NEW CURB AND GUTTER.

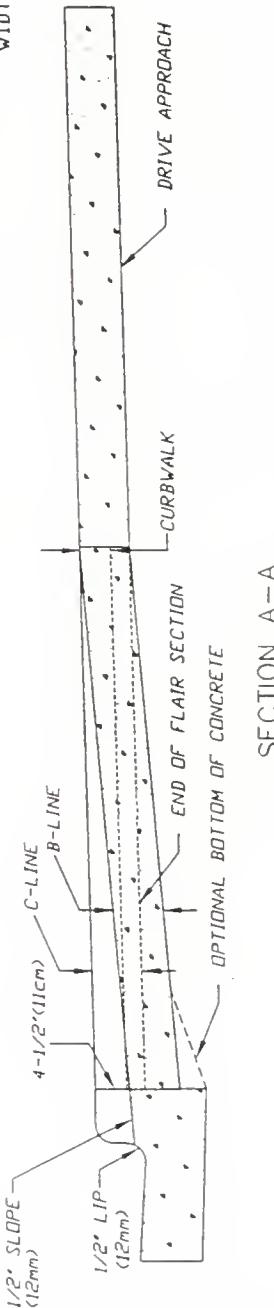
REVISED: 2/10/2000



NOTES:

1. APPROACH WILL BE PLACED MONOLITHICALLY EXCEPT WHEN CURB MACHINE IS ALLOWED BY THE ENGINEER WITH DOWELING 2.0'(60cm) ON CENTER, #4 REBAR 2.0'(60cm) IN LENGTH.

2. PROVIDE RECTANGULAR JOINT PATTERN DEPENDENT ON WIDTH OF SLABS (NOT TO EXCEED 100 S.F. (9sqm) SURFACE).



SECTION A-A

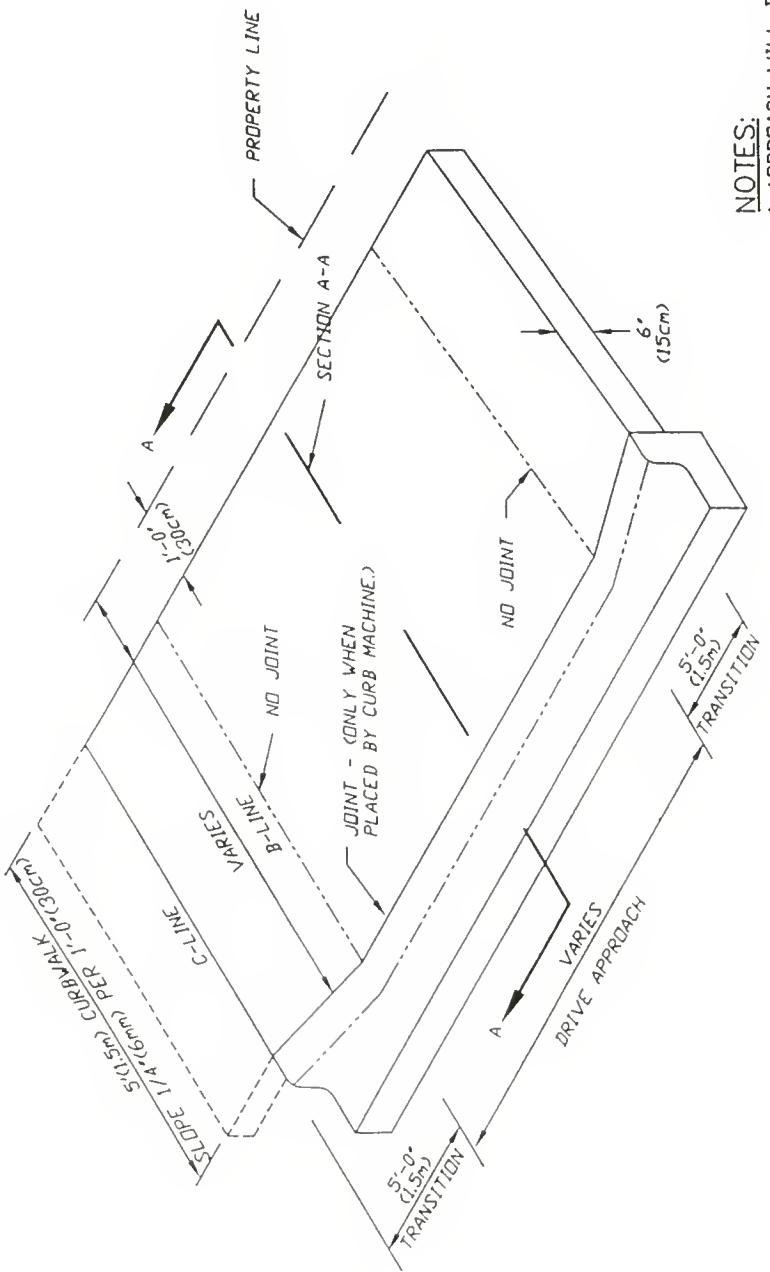
MONTANA PUBLIC WORKS  
STANDARD SPECIFICATIONS

SCALE:  
NONE

BOULEVARD DRIVE APPROACH DETAIL  
(WITH FLAIR SECTIONS)

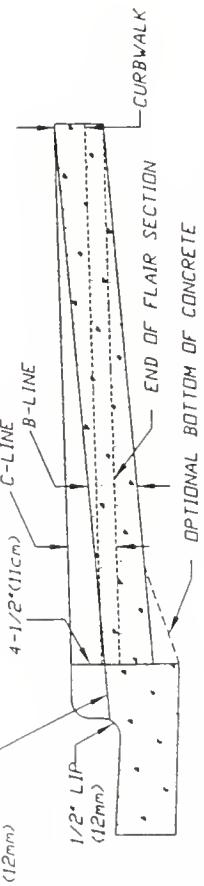
STANDARD DRAWING  
NO. 02529-5A

REVISED: 2/10/2000



NOTES:

1. APPROACH WILL BE PLACED MONOLITHICALLY EXCEPT WHEN CURB MACHINE IS ALLOWED BY THE ENGINEER WITH DOWELLING 2.0' (600mm) ON CENTER, #4 REBAR 2.0' (600mm) IN LENGTH.
2. PROVIDE RECTANGULAR JOINT PATTERN DEPENDENT ON WIDTH OF SLABS (NOT TO EXCEED 100 S.F. (95sq.m.) SURFACE).

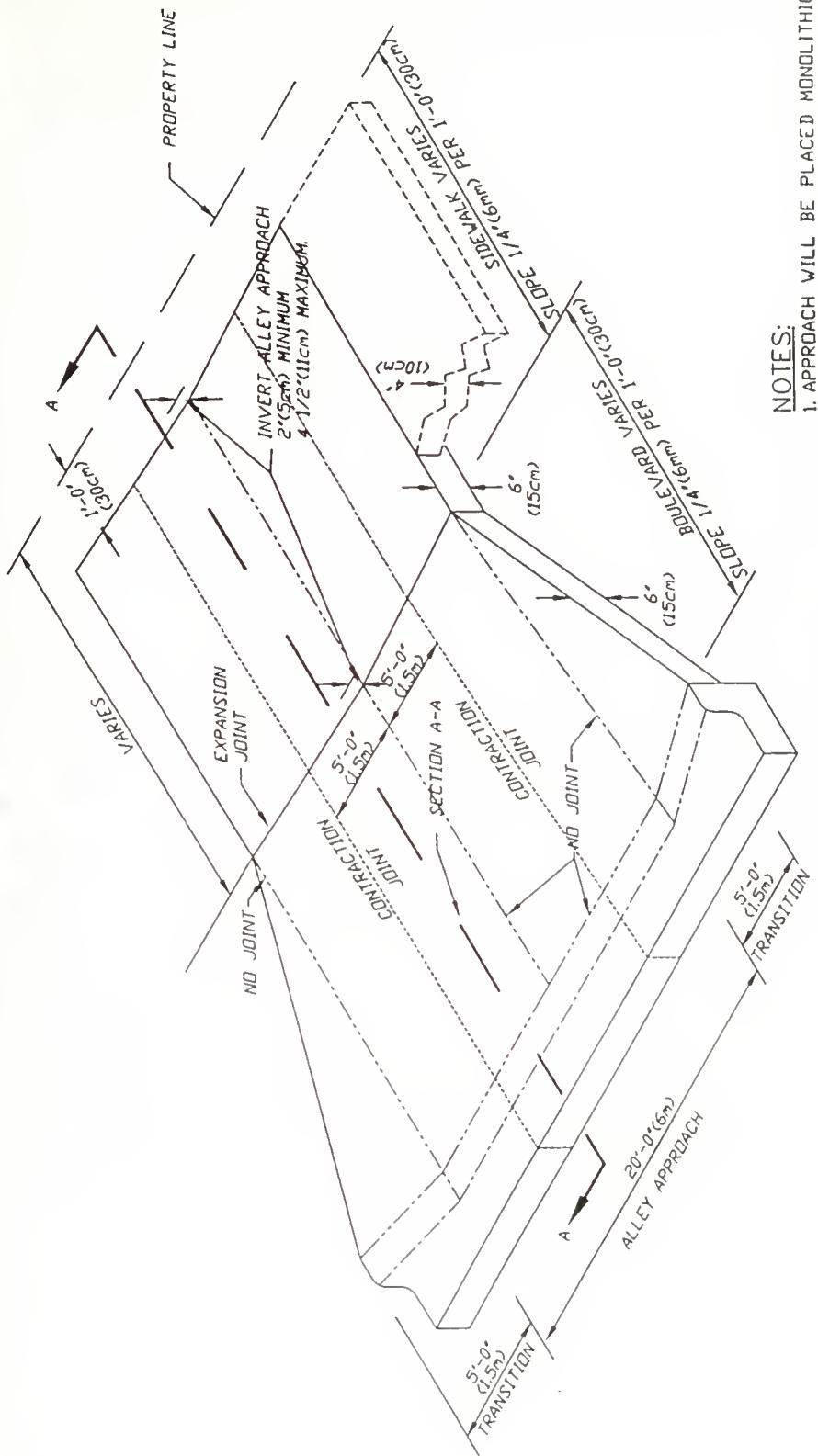


SECTION A-A

MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS	SCALE: NONE	CURB WALK DRIVE APPROACH DETAIL (WITH FLAIR SECTIONS)
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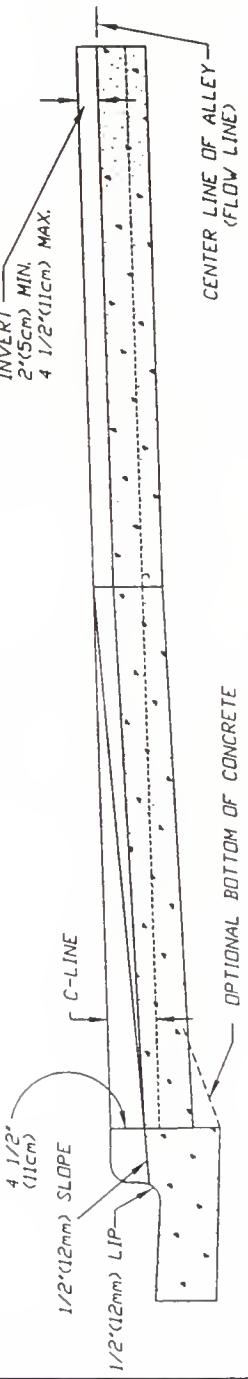
STANDARD DRAWING NO. 02529-5B
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REVISED: 2/10/2000



NOTES:

1. APPROACH WILL BE PLACED MONOLITHICALLY.
2. BOULEVARDS THAT EXCEED 12' (3.7m) IN DEPTH REQUIRE A TRANSVERSE JOINT.



SECTION A-A

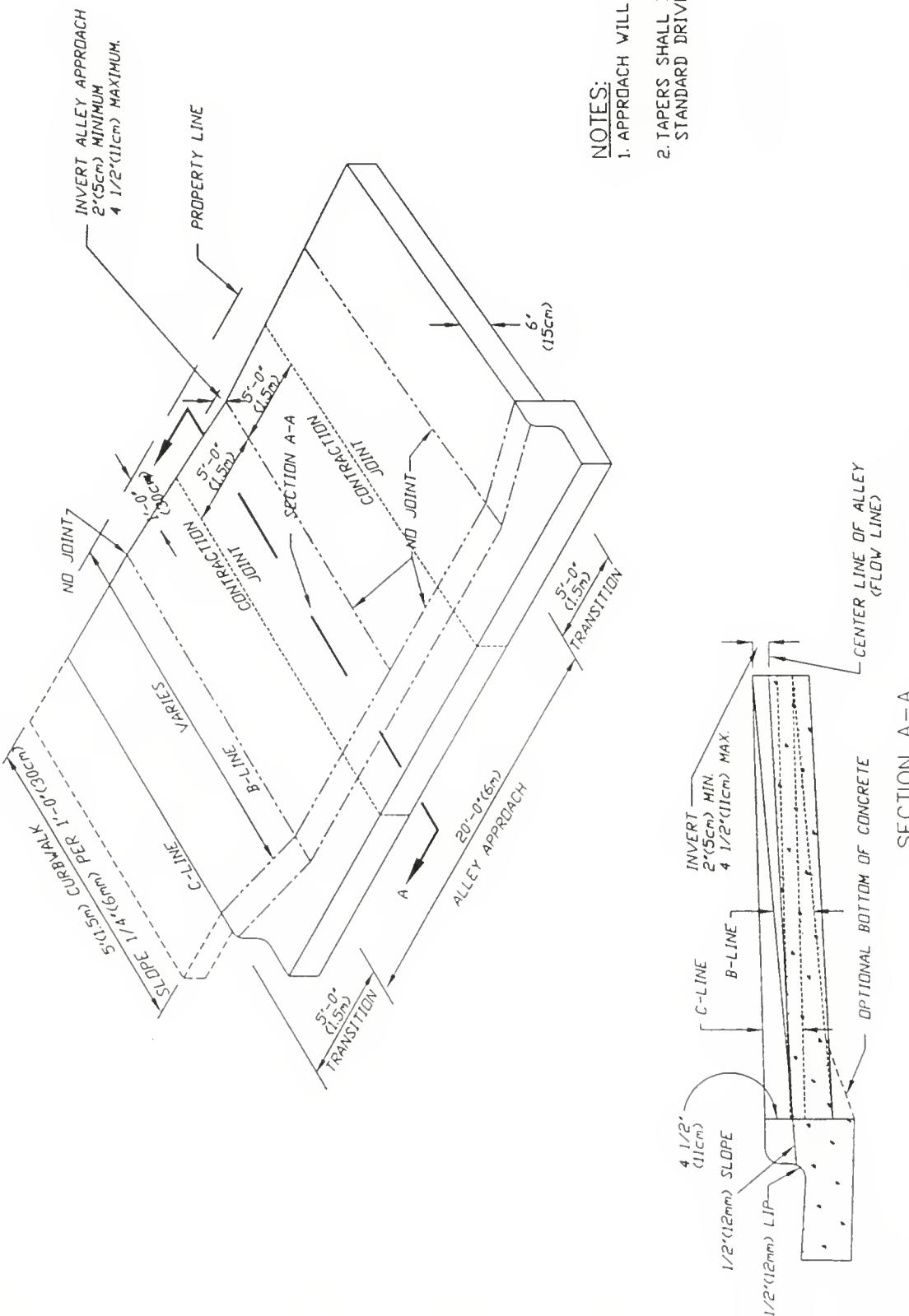
MONTANA PUBLIC WORKS  
STANDARD SPECIFICATIONS

SCALE:  
NONE

BOULEVARD ALLEY APPROACH DETAIL  
(WITH FLAIR SECTIONS)

REVISED: 2/10/2000

STANDARD DRAWING  
NO. 02529-7A

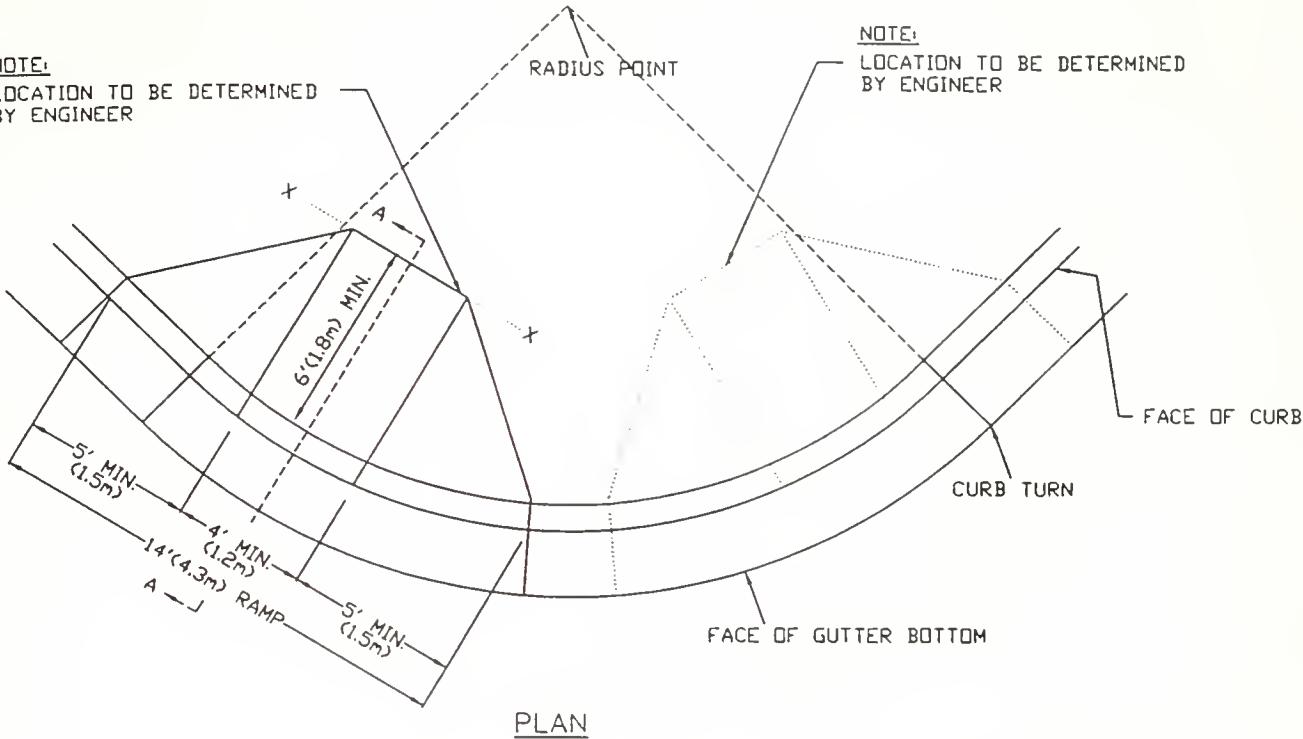


MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS	SCALE: NONE	CURB WALK ALLEY APPROACH DETAIL (WITH FLAIR SECTIONS)	STANDARD DRAWING NO. 02529-7B
REVISED: 2/10/2000			

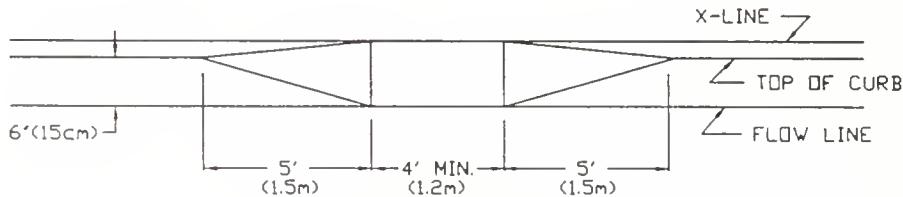
## RETRO-FIT DETAIL

**NOTE:**  
LOCATION TO BE DETERMINED  
BY ENGINEER

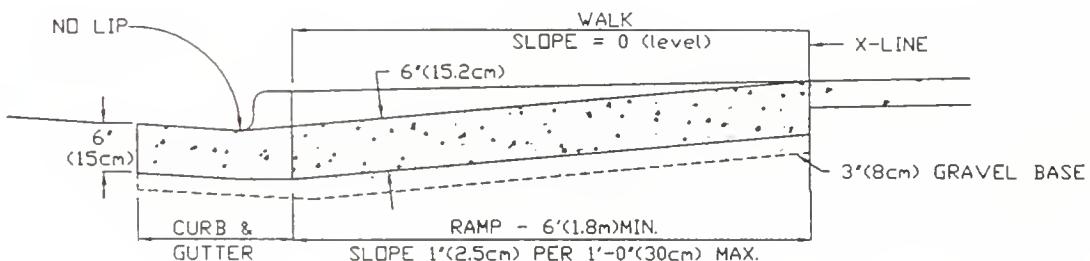
**NOTE:**  
LOCATION TO BE DETERMINED  
BY ENGINEER



PLAN



RAMP-FRONT



RAMP SECTION A-A

### NOTES:

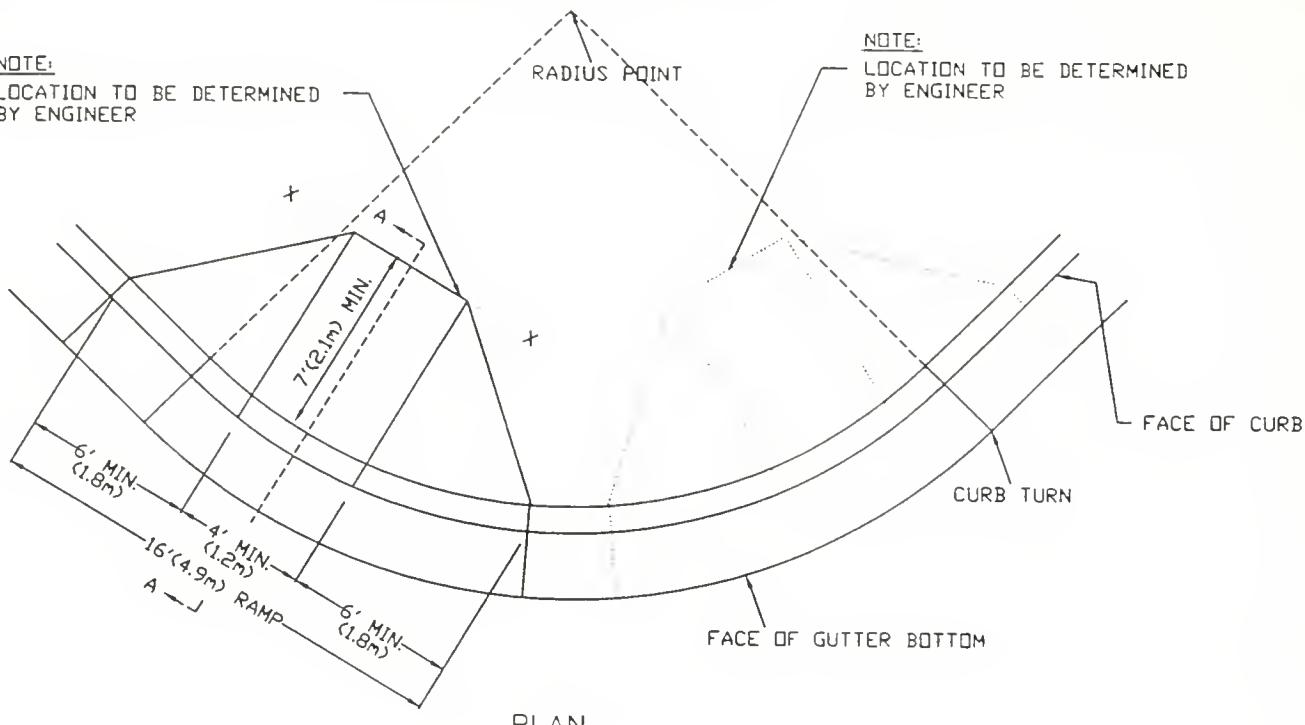
- 1.) NOT ALL INTERSECTIONS WILL HAVE TWO RAMPS PER CORNER; ENGINEER SHALL DECIDE IF TWO RAMPS ARE REQUIRED.
- 2.) PLACE 2 WHEEL CHAIR RAMPS AT UNCONTROLLED INTERSECTIONS
- 3.) DIAGONAL OR MID-RADIUS RAMPS ARE NOT ALLOWED

REVISED: 3/22/99

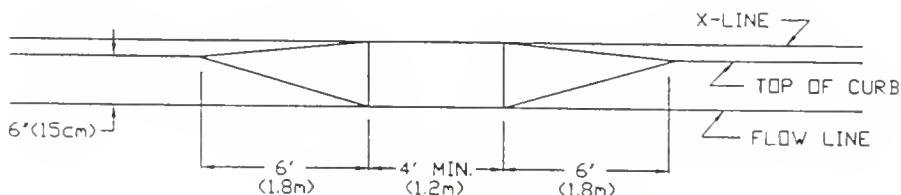
## NEW CONSTRUCTION DETAIL

NOTE:  
LOCATION TO BE DETERMINED  
BY ENGINEER

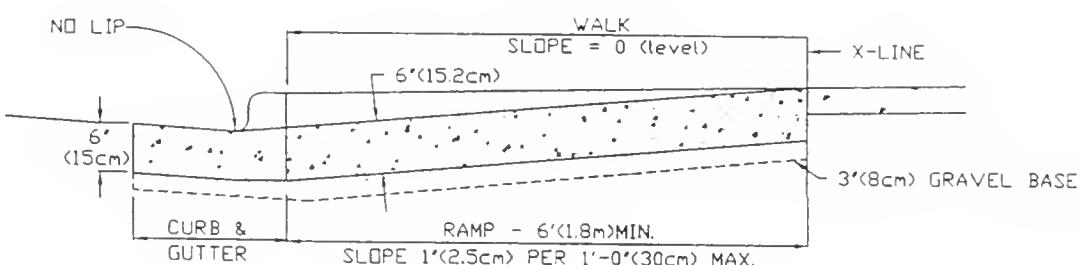
NOTE:  
LOCATION TO BE DETERMINED  
BY ENGINEER



PLAN



RAMP-FRONT

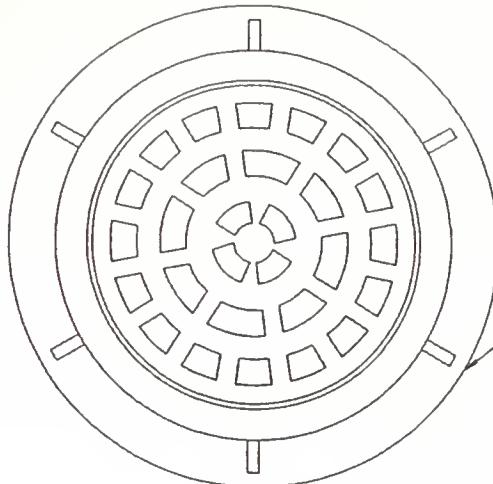


RAMP SECTION A-A

### NOTES:

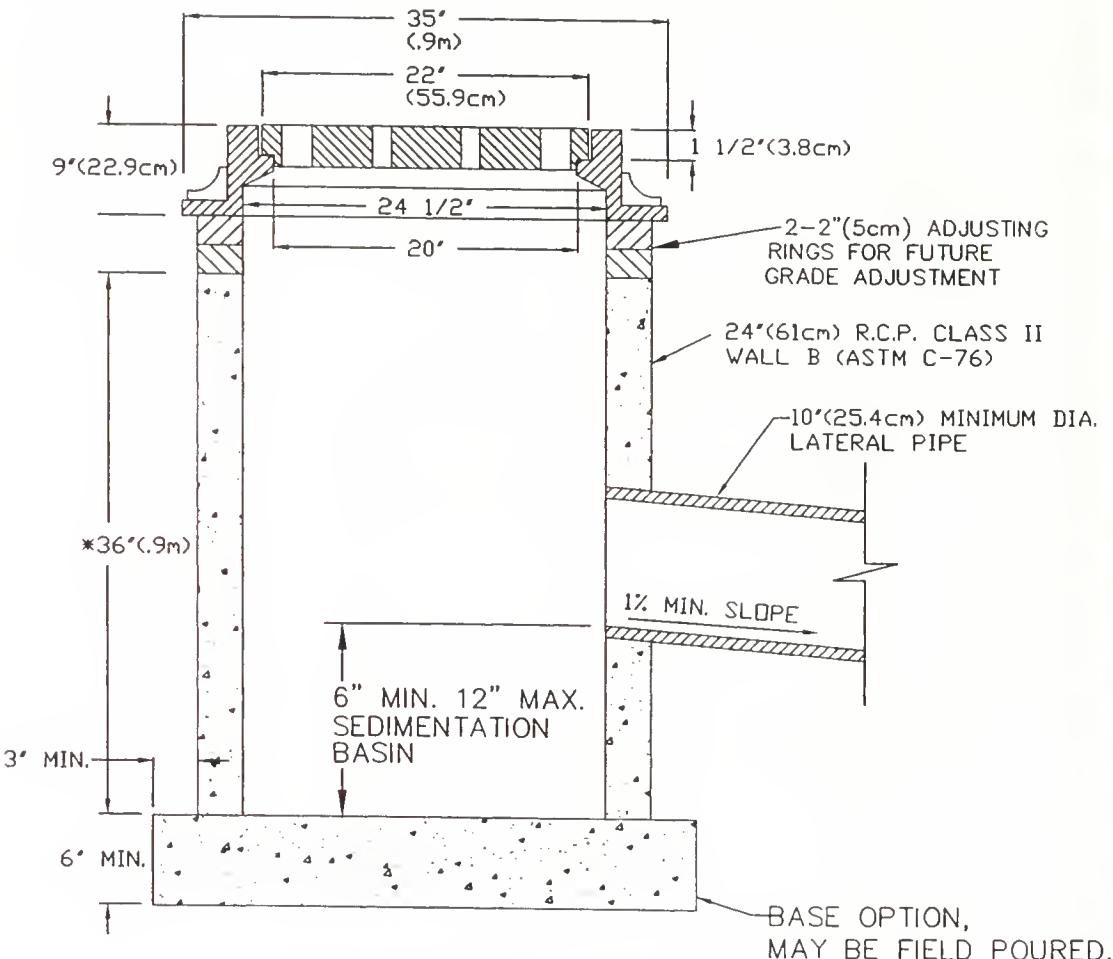
- 1.) NOT ALL INTERSECTIONS WILL HAVE TWO RAMPS PER CORNER; ENGINEER SHALL DECIDE IF TWO RAMPS ARE REQUIRED
- 2.) PLACE 2 WHEEL CHAIR RAMPS AT UNCONTROLLED INTERSECTIONS
- 3.) DIAGONAL OR MID-RADIUS RAMPS ARE NOT ALLOWED

REVISED: 3/22/99



NEENAH NO. R-2533  
OR APPROVED EQUAL  
WITH TYPE C GRATE.

PLAN



SECTION

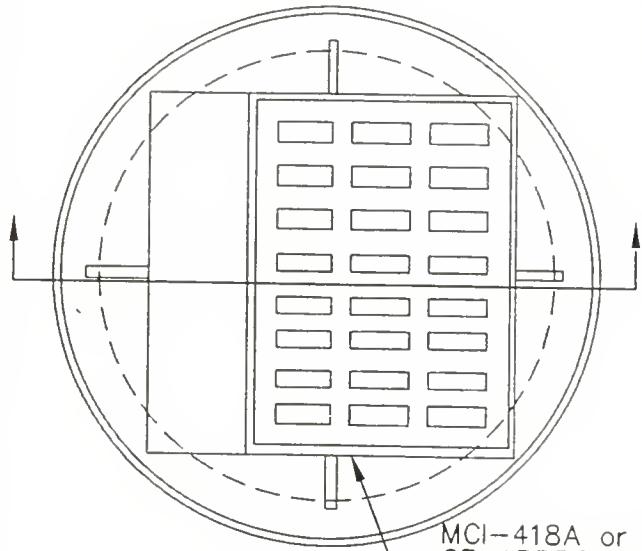
NOTE:

FOR INSTALLATION IN GRAVEL  
ALLEYS PIPE INVERT MUST BE  
6" MIN. ABOVE BASE.  
SHELF ON BASE NOT REQUIRED.

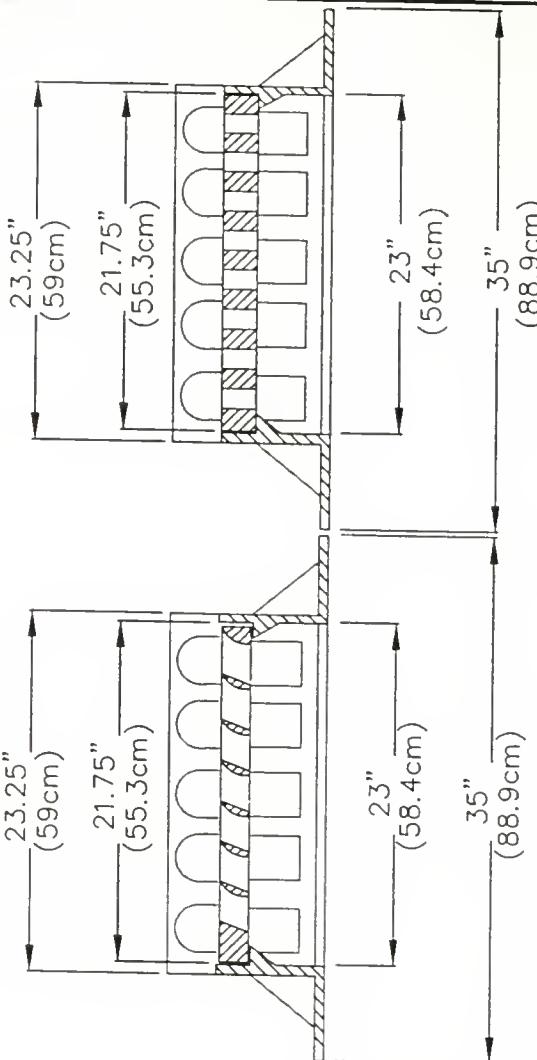
\* STANDARD, EXCEPT AS  
OTHERWISE NOTED ON THE  
PLAN - PROFILE SHEET.

2/2000

# PLAN



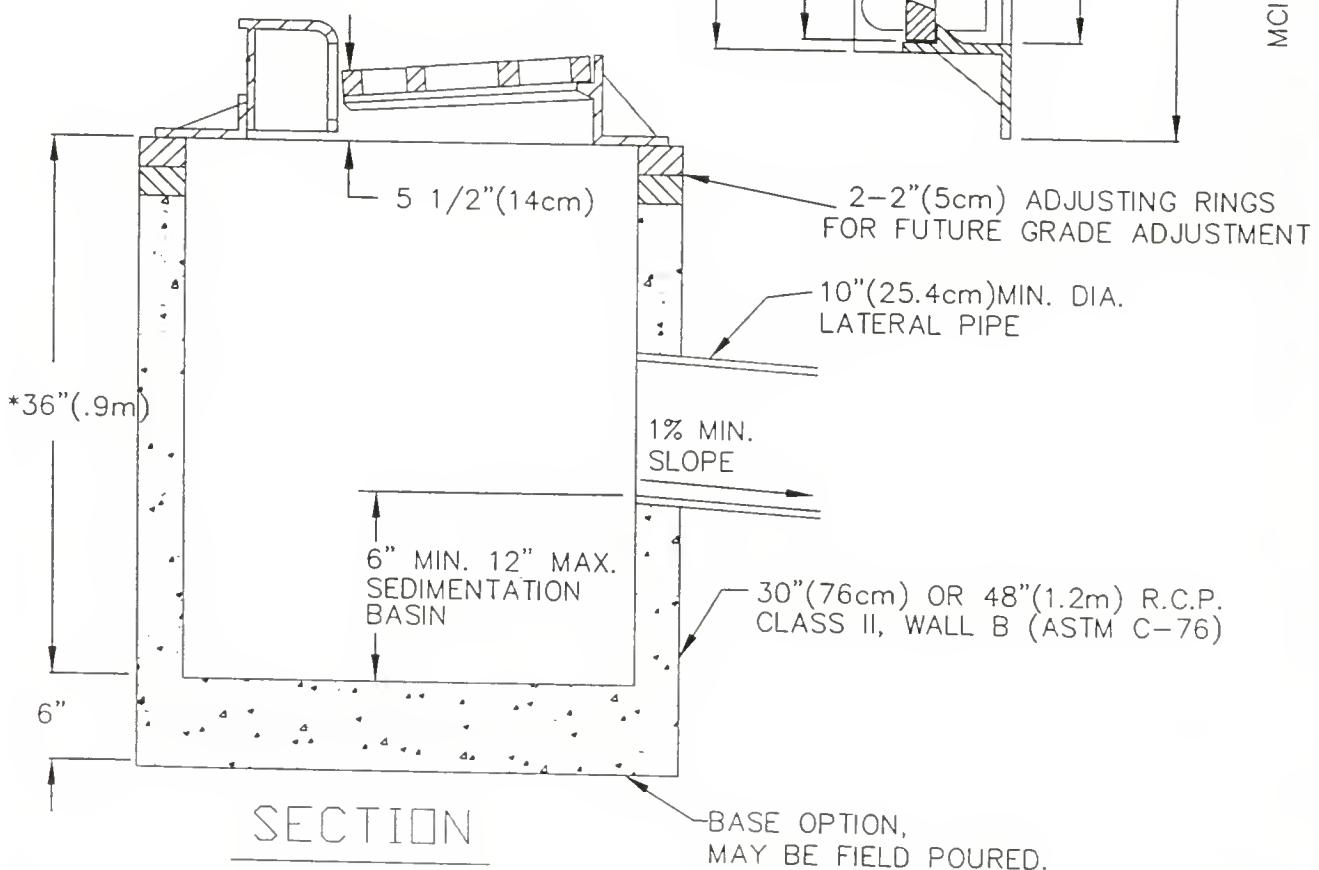
MCI-418A or 418 AA  
OR APPROVED EQUAL  
AS INDICATED ON THE  
PROJECT PLANS



MCI 418 A (TYPE II)

MCI 418 AA (TYPE III)

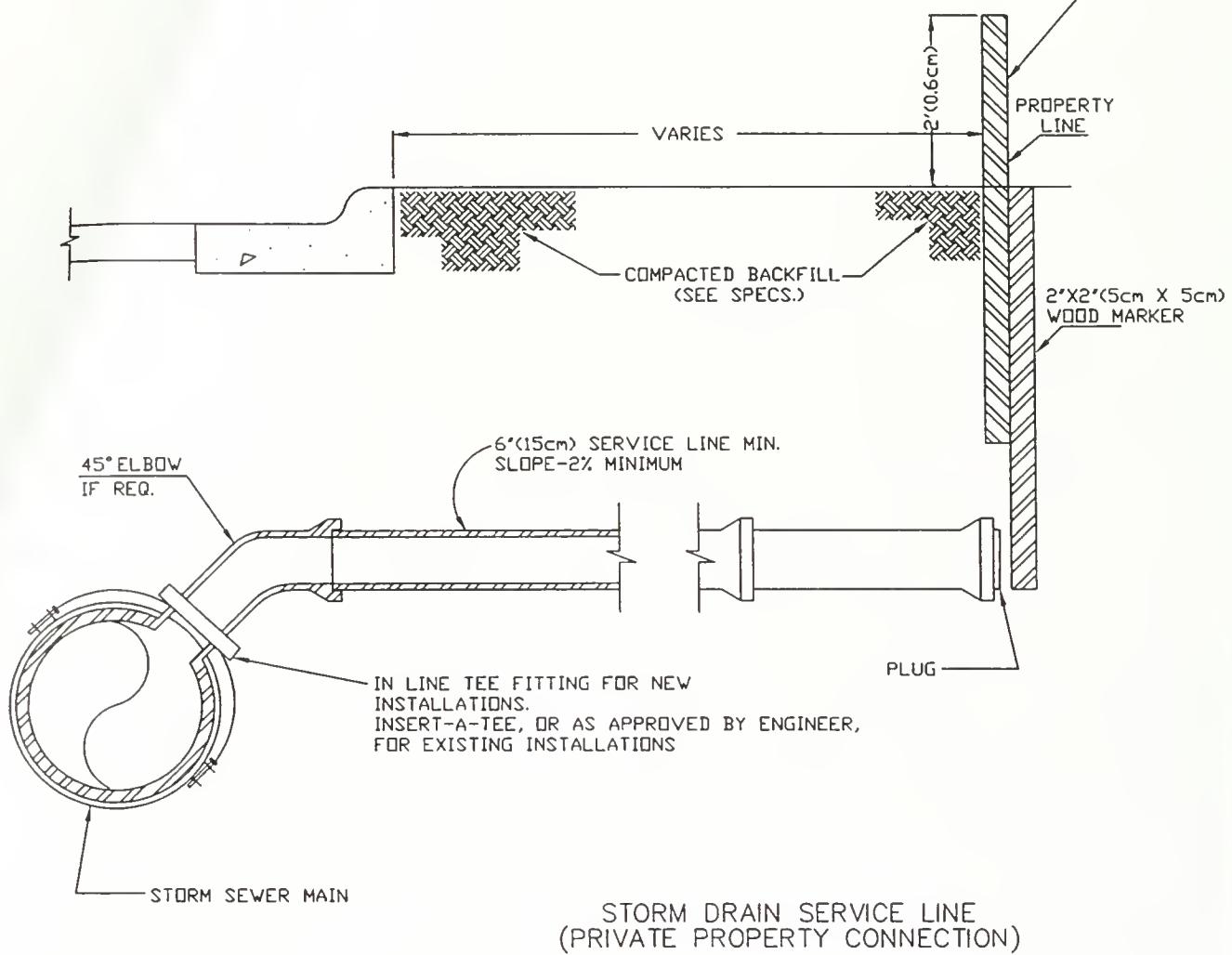
\* STANDARD, EXCEPT AS OTHERWISE  
NOTED ON THE PLAN-PROFILE SHEET.



# SECTION

2/16/2000

STEEL POST AT END OF SERVICE



REVISED: 2/17/2000

MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS	SCALE: NONE	STORM DRAIN SERVICE LINE	STANDARD DRAWING NO. 02724-2
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